VŠB - TECHNICAL UNIVERSITY OF OSTRAVA

FACULTY OF ECONOMICS

DEPARTMENT OF FINANCE

Ocenění vybrané společnosti

Valuation of Selected Company

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Ostrava 2014

VŠB - Technical University of Ostrava
Faculty of Economics
Department of Finance

Diploma Thesis Assignment

Student: **Bc. Yunfen Hou**

Study Programme: N6202 Economic Policy and Administration

Study Branch: 6202T010 Finance

Specialization: 01 Finance

Title: Ocenění vybrané společnosti
Valuation of Selected Company

Description:

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2. Description of the Selected Valuation Methods
3. Company Description
4. Valuation of Tencent Company
5. Conclusion

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References:

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Extent and terms of a thesis are specified in directions for its elaboration that are opened to the public on the web sites of the faculty.

Supervisor: **Ing. Miroslav Čulík, Ph.D.**

Date of issue: 22.11.2013

Date of submission: 25.04.2014

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The declaration

"Herewith I declare that I elaborated the entire thesis, including all annexes, independently."

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Content

1. Introduction

This thesis focuses on Tencent Holdings Limited. Tencent operates in Internet software and services industry and it is the leader in this industry in China. Tencent provides mass media, entertainment, Internet and mobile phone value-added services, and operate online advertising services in China. It is the fourth-largest Internet Company in the world after Google, Amazon, and EBay, as of August 2012.

The main objective of the thesis is to evaluate the value of selected company, based on data from 2008 to 2012. The value will be evaluated by two stage DCF method according to the forecasted balance sheet and income statement, under the base forecasted date at December 31, 2012.

There are five chapters in this thesis. The first chapter is introduction and next three parts—chapter 2 chapter 3 and chapter 4 are the most important parts. The second chapter is theoretical part, in this part the enterprises value and propose of valuation will be described. At the same time, the strategic analysis and financial analysis especially in financial ratios will be described. Finally, some valuation approaches have been introduced, especially in income approach.

In third chapter, some details of Tencent will be described for example history. Then concentrate on the products of Tencent, including products description and analysis of product. Finally, the industry information will be analyzed, including Internet industry and instant messaging industry. And then SWOT analysis will be used to analyze internal and external environment of Tencent.

In chapter 4, financial analysis will be used to evaluate the performance of Tencent, especially some important ratios will be calculated. Next two stage DCF model will be used to estimate the value of Tencent, which use CAPM model to estimate WACC of the company. Finally sensitivity analysis will be used to analyze the sensitivity of some important items in

balance sheet and income statement to the value of Tencent.

The last chapter is conclusion. Based on the analysis presented in chapter 3 and chapter 4, main conclusions and recommendations will be presented in this chapter. By above analysis we are able to assess the performance of the company and get the value of the company and sensitive variable to value of the company. Finally, a better plan could be made to improve the performance and value of the company.

2. Description of the Selected Valuation Methods

Business valuation is a complex process used to estimate the value of the assets or the fair market value of the whole enterprise as a whole, based on the condition and profitability of all its assets with considering all factors that influence the corporate profitability, macroeconomic environment and industry background. The value is discounted value of the total expected cash flow in the future. There are three sources of cash flow: a) Profit: this is the main way to realize the value. Business operators through continuous long-term operation to create cash flow, so this value realizing is a gradual process. b) Liquidation: the cash flow from selling asset at market price after deducting the transaction and legal costs. This cash flow is a one-time gain in the current period. c) Ownership transactions: through selling the company's equity, the owner also could get the value.

Before the value of a business can be measured, the valuation assignment must specify the reason for and circumstances surrounding the business valuation. These are formally known as the business value standard and premise of value. The standard of value is the hypothetical conditions under which the business will be valued. The premise of value relates to the assumptions, such as assuming that the business will continue forever in its current form, or that the value of the business lies in the proceeds from the sale of all of its assets minus the related debt.

2.1 Enterprises value

Enterprise's value is the intrinsic value which depends on the company's overall profitability and risk level. There are three types of value: fair market value, investment value and intrinsic (fundamental) value.

Fair market value is the price at which the asset would be sold between a willing seller and a willing buyer without compulsion, and both seller and buyer have reasonable knowledge of

relevant facts. The market value is suitable for hypothetical buyer and seller, tax situation, marital dissolution situation and entrance on a stock exchange.

Investment value is the value to a particular investor based on individual investment requirements and expectations. This value is based on the uniqueness of the company. The key point is the individual opinion of transaction participants. The investment value is suitable for particular buyer and seller.

The investment value to one particular owner or prospective owner can be different from the fair market value. Valid reasons for this difference can include perceptions in estimates of future earning power and perceptions in the degree of risk involved.

Intrinsic value is the true worth of an item based on evaluation of available facts. This value is based on fundamental analyses of publicly traded company. Intrinsic value is used for investment decision whether buy, sell or hold the stock.

2.1.1 Maximizing enterprise value

Now, the goal of corporate financial management, more precisely, the goal of company is to maximize corporate value. This view is different from previously enterprises goal—profit maximization, but also with each other cannot be replaced. Because this goal than profit maximization has the following advantages:

- An enterprise value is more comprehensive than the profit targets to reflect the company's operating conditions.

  Profit indicators reflect only the performance of the enterprise for a period, but cannot describe the corporate behavior during the whole duration. There are various stages during development of enterprises, and the products of enterprises have life cycles including introduction stage, growth stage, maturity stage and decline stage. A certain period of corporate profits has a huge different from other times, but the profitability of a particular time and cannot explain the level of corporate profits during the whole

duration. Thus corporate profits index does not fully reflect the business situation of enterprises, and if the enterprise only emphasis on profit targets, business owners would tend to increase the short-term behavior which is not benefit to long-term development of enterprises.

- The enterprise value may reflect enterprises operating conditions under the uncertain situation.

  Under certain situation, the goals of maximize corporate value and maximize corporate profits are basically the same. But under the uncertain business living environment, corporate profits can only reflect the company's business situation at a particular time, but cannot make a very good description of the uncertain business operation in the future. The value of the business was able to reflect this uncertainty through discounting future cash flows.

- Enterprise value is better to reflect people's expectations on enterprise and growth of the enterprise's industry than the profit targets.

  Corporate profits can only reflect the difference between sales and total cost of a certain period, but there is no necessary connection between this year's earnings and the company's future profitability. It is impossible to simply calculate the company's future profitability levels according to a few past years' profitability. Generally speaking, the higher the growth rate of the enterprise, the greater enterprise value which is same as the common sense of people. Under the same condition, sunrise industry companies will have a higher value than sunset industry enterprises, but corporate profits indicators can not reflect the company's growth.

2.1.2 Purposes of valuation

Financial modeling and valuation of the company is an important method for investment banks which is widely used in a variety of transactions.

- Buying and selling operations
- Initial public offering (IPO)
- Strategic on the company’s continued existence
- Strategic planning
- Estate, gift and income tax
- Mergers and acquisitions
- Marital dissolution
- Compensation

Valuation of the company is benefit for us to evaluate the performance of the company and the intrinsic value of the company’s business, in order to establish the basis for pricing a variety of transactions.

For investment management institutions, business valuation on the basis of the financial model is not only an important research method, but also a basic skill for practitioners. It can help us:

- Transform the understanding of the industry and the company into specific investment recommendations
- Forecast impact of the value of the company's on the company's strategy and its implementation
- Deeply understand the relationship between the variables which affect the value of company
- Determine the impact of the company's value on its capital transactions

There are 5 steps to valuation: data collection, strategic analysis, financial analysis, financial plan creation and valuation approaches. Data collection is collecting the data what we need.

2.2 Strategic analysis

Strategic analysis is used to analyze the internal and external environment through collecting

and organizing the information, it includes organizational diagnostics and environmental analysis. Strategic analysis used in order to:

- Get the scientific enterprise competitive strategy on the basis of comprehensive and systematic strategy analysis
- Clear the development direction and business development ladder
- Fully communicate and build common sense of corporate strategy in the company organization
- Get the same enterprise development direction and then achieve the strategic objectives
- Let employees recognize and support the business strategy and goals, enhance staff's responsibility
- Establish strategic decision-making mechanism in order to make scientific and forward-looking decision
- Not only pay attention to short-term performance, but also focus on long-term development
- Improve the company's overall performance and core competitiveness

There are three tools to analysis strategic, including analysis of the external potential, analysis of the internal potential and SWOT analysis.

Analysis of the External Potential

This method uses basic information about relevant market, including scope of the business and territory and the size estimation of the relevant market. There are several factors influence the market evolution, including market growth, return on the market, sensitivity on the economic cycle, macroeconomic factors (GDP, interest rate, exchange rate, inflation…), price of specific commodities and so on. There are two methods to predict the market development. The first one is simple time series analysis of the market size evolution, and the second one is regression analysis.

Analysis of Internal Potential

This method uses basic information about market share, including the size estimation of the market share. This method used to identify the main competitors (collection of the relevant (especially financial) data). There are several factors influence the market share evolution, including management of the company, quality of employees, R&D, investments, produces (quality, price…) and so on. There are two methods to predict the market share development. The first one is simple time series analysis of the market share evolution, and the second one is regression analysis.

SWOT analysis

SWOT analysis is a method used to determine the company's own competitive advantage (strength), a competitive disadvantage (weakness), opportunity and threats, in order to combine the company's strategy and the company's internal resources, external environment. Strengths are the characteristics of the business or project that give it an advantage over others. Weaknesses are the characteristics that place the business or project at a disadvantage relative to others. Opportunities are elements that the project could exploit to its advantage. Threats are elements in the environment that could cause trouble for the business or project. Thus, clear the company's resources strengths and weaknesses and understand the opportunities and challenges that the company facing have a very important meaning for establishment of the company's development strategy in the future.

2.3 Financial analysis

Financial analysis is based on the report data and other relevant information, using series of specialized analysis techniques and methods to analyze and evaluate profitability, operational capacity, solvency and ability to grow status on related financing activities, investment activities, operations, distribution activities of enterprises and other economic organizations in the past years. It provide economic discipline or accurate information to corporate investors, creditors, business operators and other concerned organizations and individuals to

understand the business in the past, evaluate enterprise status or to forecast future business.

There are 2 financial analysis methods, common-size analysis and financial ratio analysis. Common-size statements are used to overcome the problem that difference in firm size may confound cross sectional and time series analyses. There are two types of common-size analysis, vertical common-size analysis and horizontal common-size analysis. In vertical common-size analysis, we restate financial statements as common-size statement which expresses each item on the balance sheet or income statement as a percentage of total asset or total revenues. In horizontal common-size analysis, we use the accounts in a given period as the base period and restate the financial statements that each item on balance sheet and income statement in subsequent period as a percentage of the base period's same item.

Financial ratio analysis uses the items in balance sheet and income statement and other information to assess a company's financial performance and financial condition. Specially, financial ratio analysis uses comparisons of financial data in the form of ratios to assess a company's financial health and profitability. There are four kinds of financial ratios: activity ratios which used to measure how well assets are used, liquidity ratios which used to measure a company's ability to generate cash to meet its immediate needs, solvency ratios which used to assess a company's financial risk level and profitability ratios which used to measure the ability of a company to earn profit.

Current ratio

The current ratio is the ratio of current assets to current liabilities. It is a kind of liquidity ratio. Liquidity ratios measure the company's short-term solvency—the ability to of a company to meet its debt requirements as they come due. Current ratio provides a good measure of solvency if accounts receivables and inventories are liquid. This ratio is a measure of a company's ability to satisfy its current liabilities with its current assets:

$$Current\ ratio = \frac{current\ assets}{current\ liabilities}. \tag{2.1}$$

Debt-to-equity ratio

Debt-to-equity ratio is a kind of solvency ratio. This ratio is controversial. Some valuatioan analysts will exclude deferred tax liabilities if they believe these liabilities will grow and not be paid. Some analysts will include the effect of operating leases, especially if the lease should have been capitalized. The debt-to-equity ratio is a measure of the proportion of equity that is financed with debt (both short-term and long-term debt):

$$Debt-to-equity\ ratio = \frac{total\ debt}{total\ shareholders'\ equity}. \tag{2.2}$$

Return on asset

Return on asset is the ratio of net income to average total assets. This ratio is an important test of management's ability to earn a return on funds supplied from all sources. Return on assets is an indicator of how profitable a company is before leverage, and is compared with companies in the same industry.

$$Return\ on\ assets = \frac{net\ income}{average\ total\ assets}. \tag{2.3}$$

Return on equity

Return on equity is the ratio of net income to average shareholder's equity. Because interest and dividends paid to creditors and preferred stockholders respectively are fixed in amount, a company may earn a greater or smaller return on the common stockholders' equity than on its total assets. Return on equity measures a company's profitability by revealing how much profit a company generates with the money shareholders have invested.

$$Return\ on\ equity = \frac{net\ income}{average\ shareholders'\ equity}. \tag{2.4}$$

2.4 Financial plan

Financial plan is used to determine the future development of the relevant items in the

financial statements. It is the fundamental basis for the income methods and it consists of sub-plans. There are several plans we should to create, including plan of the sales, plan of the OPM (operating profit margin), plan of NWC (net working capital), plan of investments and plan of depreciation.

Plan of the sales

We can create plan of the sales based on the strategic analysis. Or we can use regression model to predict the sales revenues. The dependent variable is company's revenue and the independent variables could be some macroeconomic variables. We would find out the relationships between company sales and these macroeconomic variables. Then use the forecasting value of macroeconomic variables according to some financial institutions to predict the revenues.

Plan of OPM

We can use predicted sales to forecast the operating profit. First, we should find out the relationship between OPM and sales, like follows:

$$OPM = \frac{NOPAT}{sales}. \tag{2.5}$$

We should notice some points for example this plan should without depreciation because it is more appropriate to analysis in the plan of the investment. The objective of this plan is to assess the relationship between changes in cost and volume of production.

Plan of NWC

We should use predicted sales and the relationships between items in balance sheet and income statement to forecast the future balance sheet, then we can calculate the predicting NWC:

$$NWC = working\ capital\ -\ short\ term\ liabilitie\ s, \tag{2.6}$$

$$k = \frac{item\ of\ the\ NWC}{sales}. \tag{2.7}$$

The objective of this plan is to assess the relationship between changes in the term of the NWC and volume of production.

Plan of Investment

It is necessary to take into account the capacity due to planned sales growth, at the same time, it is necessary to plan the depreciation. We can use predicted sales to forecast the investment:

$$k = \frac{\Delta fixed\ assets}{sales}. \tag{2.8}$$

Plan of depreciation

We can use predicted balance sheet and income statement to forecast the depreciation in the future according to the following relationship:

$$k = \frac{depreciation}{fixed\ asset}. \tag{2.9}$$

2.5 Valuation approach

There are three approaches of valuation, the income approach, the asset approach and the market approach.

2.5.1 The Income Approach

Value today (present value) equals future benefits discounted at the opportunity cost of capital. The value of an ownership interest is equal to the sum of the present values of the expected future benefits of owning that interest. We can classify the methods of the income approach into 3 ways by the type of the future benefits: DCF method, capitalized income method and EVA method. The most important method is DCF method.

2.5.1.1 DCF method

The *first step* is to estimate future free cash flows series from the company's assets. The company's created cash flow as known as free cash flow which is created by business

activities based on asset and investment activities in a period. However, these cash flows do not include the income and expenses about corporate financing activities. Thus, the formula of the created free cash flow in a period of time is:

$$FCFF = EBIT \cdot (1-t) + DEP - \Delta NWC - INV . \tag{2.10}$$

The value of any operating asset or investment is equal to the present value of its expected future economic benefit stream. The basic formulas are:

$$V = \sum_{t=1}^{T} \frac{FCF_t}{(1+R)^t}, \tag{2.11}$$

$$V = \sum_{t=1}^{\infty} \frac{FCF_t}{(1+R)^t} = \frac{FCF}{R}. \tag{2.12}$$

There are two key parameters in these formulas, *FCF* and *R* (cost of capital). So the *second step* is to estimate the discount rate or *WACC*.

The weighted average cost of capital discount rate model is a more common method of calculation in the valuation of companies. The model is based on the investment capital which consists of the company's owner's equity capital and long-term liabilities, as well as the required investment rate of return on the investment capital. It is a mathematical model to assess the value of the required discount rate by using all these information to calculate weight average of the company. Cost of capital represents the opportunity cost that investor face for investing their funds in one particular business instead of others with similar risk. The formula is:

$$WACC = R_e \cdot \frac{E}{A} + (1-t) \cdot R_d \cdot \frac{D}{A}. \tag{2.13}$$

There are three key parameters that influence the cost of capital, cost of equity (R_E), cost of debt (R_D) and market—based capital structure. The estimation of the cost of debt (*Rd*) is that on the developed markets by means of yield curves (the relationship between time to maturity and yield to maturity of the traded bonds). Cost of equity is the expected rate of return of

company's stock. There are 3 models for estimating expected the cost of equity (*Re*): CAPM, building-up method and Gordon model.

CAPM

$$E(R_E) = R_f + \beta_e \left[E(R_m) - R_f \right] \tag{2.14}$$

Risk free rate and market risk premium are common to all companies, beta varies across companies.

- Estimating the risk free rate

  In practice, we use return of government bonds as the risk free rate. Each cash flow should be discounted using a government bond with a similar maturity. For estimating continual value within DCF method and EVA method, do not use a short term Treasury bill to determine the risk free rate.

- Estimating the market risk premium

  In practice, the expected return of market is approximated by an index return (S&P 500 and so on). Then we calculate the risk premium related to long term government bonds (use the longest period possible). Then we use some type of average or regression (market risk premium can be predictable using observable variables, such as the aggregate dividend-to-price ratio…) to predict the future market risk premium.

- Estimating β

  According to CAPM, a stock's expected return is driven by β, which measures how much the stock and market move together. Since β cannot be observed directly, we must estimate its value. For β estimating, the regression analysis is most often use.

Gordon model

$$R_e = \frac{DIV}{E} + g \tag{2.15}$$

Yield curves

We use the yield to maturity of the company's long term bonds,

$$P = \frac{coupon}{(1+YTM)} + \frac{coupon}{(1+YTM)^2} + \ldots + \frac{face + coupon}{(1+YTM)^n}. \tag{2.16}$$

Building-up model

This method is used by analyst who work with small and medium-size companies,

$$E(R_E) = R_f + RP_m + RP_s + RP_u. \tag{2.17}$$

RP_s—risk premium for small size

From empirical evidence as the size of a company decreases, the risk to that company increases.

RP_u—risk premium for specific company

Risk associated with the particular industry in which the subject company operates in relation to the economy as well as the risk associated with internal working of the subject company

The *last step* is to calculate the value of the company. There are two kinds of DCF method—one phase method and two phase method. One phase method is expected the same (or constant) behavior of the company value over the whole valuation period. In this method, the company value can be calculated (under assumption of constant free cash flows) as perpetuity as formula (2.12) or with constant rate of increase (or decrease) in *FCF*:

$$V = \frac{FCF}{R-g}, \tag{2.18}$$

where

$$g = \frac{FCF_{t+1} - FCF_t}{FCF_t}. \tag{2.19}$$

In two—phase method, due to the possibility of free cash flows estimations, divide the life of

the company into 2 phases. First phase is planned for 4 – 6 years and it is assumed, that the situation in the company is more predictable and it is easier to plan and estimate FCF from company activities relatively precisely. Often after the first phase, second phase follows, which lasts to infinity. It is assumed, that during the second phase only the trend in free cash flows can be estimated. Company value equals the sum of values of both phases:

$$V = V_1 + V_2 . \tag{2.20}$$

In the first phase, free cash flows generated by the company can be estimated relatively precisely.

$$V_1 = \sum_{t=1}^{T} \frac{FCF_t}{(1+r_1)^t}, \tag{2.21}$$

where T is the length (number of years) of the first phase, r_1 is cost of capital in the first phase.

In the second phase it is assumed, that only trend in free cash flows is known. Here we work with so called continual (terminal) value, *CV*, which is the company value in the second phase at the beginning of the second phase. This value must be subsequently discounted to the valuation date.

$$V_2 = CV \cdot (1+r_1)^{-T} . \tag{2.22}$$

Under the assumption of constant free cash flows in the second phase is continual value calculated as follows,

$$CV = \frac{FCF_{t+1}}{r_2}, \tag{2.23}$$

where r_2 is the cost of capital in the second phase.

Under the assumption that the free cash flows growth annually by rate *g*, then the continual value is calculated as follows,

$$CV = \frac{FCF_{t+1}}{r_2 - g}. \tag{2.24}$$

We can express the *CV* also by means of the value drivers,

$$CV = \frac{NOPAT_{t+1} \cdot (1 - \frac{g}{RONIC})}{r_2 - g}. \tag{2.25}$$

Total company value can be written as follows:

$$V = \sum_{t=1}^{T} \frac{FCF_t}{(1 + r_1)^t} + \frac{FCF_{t+1}}{r_2 - g} \cdot (1 + r_1)^{-T}, \tag{2.26}$$

or

$$V = \sum_{t=1}^{T} \frac{FCF_t}{(1 + r_1)^t} + \frac{NOPAT_{t+1} \cdot (1 - \frac{g}{RONIC})}{r_2 - g} \cdot (1 + r_1)^{-T}. \tag{2.27}$$

There are two main advantages of DCF model. First it clearly assess that the valuation value is closely related to the asset's utility or usefulness, it focused on the future profitability of its assets. Second it applies to companies with high financial leverage or the companies that the financial leverage ratio is always change. But DCF method is very complicated, in practice, it must be satisfied an assumption that the company continues to be stable, the future cash flows could be expected and it must be positive. Generally speaking, DCF method is more suited to listed companies which have stable cash flows in a period of time.

2.5.1.2 EVA method

EVA method is based on the concept of economic profit. This method can be used as tool of financial analysis (financial indicator) and future benefit stream within company's valuation. The basic formula is:

$$EVA_t = NOPAT_t - C_{t-1} \cdot WACC_t. \tag{2.28}$$

Differences between DCF method and EVA method:

- Both methods lead to the same result.
- EVA method can show us whether company creates the value or not, but DCF method cannot.

This approach directly reflects the impact of company's value-driven factor on the value, which is easy for us to carry out strategic planning. At the same time, this method is relatively simple to take into practice. After forecasting EVA, we can use EVA to replace the cash flow and then calculate the present value according to the formula of the discounted cash flow method. But strictly speaking, EVA is also a discounted income method. It just considers the cost of all capital in calculating accounting revenue process. At the same time it considers that creating value is to obtain a higher return than the cost of capital.

2.5.1.3 Capitalized cash flow method

The capitalized cash flow method of the income approach is an abbreviated version of the discounted cash flow method where growth (g) and the discount rate (k) are both assumed to remain constant into perpetuity.

2.5.2 The Asset Approach

The asset approach is defined in the *International Glossary of Business Valuation Terms* as "a general way of determining a value indication of a business, business ownership interest, or security using one or more methods based on the value of the assets net of liabilities." In the valuation of a business or business enterprise, the asset approach presents the value of all the tangible and intangible assets and liabilities of the company.

Asset approach is to assess the value of the whole company through plus the total value of the various assets of the company. Usually in the actual process, based on the net company's total assets exceed total liabilities after excluding bond discount, the formation expenses and deferred charges, plus inventories reserve.

Advantages

- Relatively simple and easy measurement and recognition. It only needs to assess each asset without considering the portfolio asset.
- Strong operability. We can calculate the value of the asset according to information on the company's balance sheet.
- Prevent loss of assets. In China, the efficient in state-owned enterprises is low, non-operating assets occupy a large proportion, under the imperfect security market conditions, asset approach will be a better approach in order to prevent state assets loss.
- Serve as a basis for evaluation of the value of the company. Although the value according asset approach can not truly reflect the intrinsic value of the company, but it can serve as a basis for evaluation of the value of the company as a part the company's value.

Disadvantage

- It only considers the value from the historical cost, but it lack of actual efficiency of the asset and operational efficiency.
- It is worse to estimate the intangible asset, especially for high-tech companies.
- It is easy to misunderstand the evaluating result. The results of this assessment method whether good or bad benefits, as long as the original investment amount is the same to similar company, then the valuation of the company has the same value. Even sometimes the value of the inefficient firms will be higher than the value of the efficient company.
- It ignores the time loss of assets. It considers the cost of operating loss in the production process through depreciation, but it did not consider the time loss, the value of same assets is not the same at different times.
- It ignores the overall assets combination effects.

Asset approach is more suitable for the assessment of non-operating assets and bankrupt companies. Because, the combined effects do not exist for non-operating assets and for the liquidation company, the company is in shutdown, the combined effects of assets almost without consideration.

2.5.3 The Market Approach

Its principle is to use the "reasonably comparable guideline companies" (sometimes called "comparables" or "comps") which is similar to target company (the company being evaluated) and the value may be known to estimate the value of the company. The values may be known because these companies are publicly traded or because they were recently sold and the terms of the transaction were disclosed. It use the ratio of particular variable between target company and comparable company as an adjustment factor to estimate the value of target company after adjustment the value of comparable company.

$$V = multiplier_{comps} \cdot parameter \, . \tag{2.29}$$

"Parameter" might be sales, net income, book value and the like. The multiplier is the appropriate pricing multiple based on that parameter (eg. Price/net income, price/book value). For example:

$$V = (P/E)_{comps} \cdot earnings \, , \tag{2.30}$$

$$V = (MV/BV)_{comps} \cdot BV \, . \tag{2.31}$$

The key point is to determine the comparable company. Comparable companies and markets are not necessarily the same as the subject company. When determine comparable companies, we should consider the similar companies to target company in risks and cash flow. Generally, the comparable company should in the same industry with the target company and has similar size to target company in order to ensure that both have similar risk and cash flow characteristics, thus they are comparable in the main areas.

Advantages

- It is fairly simple to understand. Companies with similar product, geographic, and/or business risk and/or financial characteristics should have similar pricing characteristics.
- It uses actual data. The estimates of value are based on actual stock prices or transaction

prices.

- It is relatively simple to apply. The income approach requires the creation of a mathematical model. The market approach derives estimates of value from relatively simple financial ratios.
- It includes the value of all of a business's operating assets.
- It does not rely on explicit forecasts. The income approach requires a set of assumptions used in developing the projected/forecasted cash flows. The market approach does not require as many assumptions.

Disadvantages

- No good guideline companies exist. This may be the biggest reason the approach is not used in a valuation; the analyst may not be able to find guideline companies that are sufficiently similar to the subject. Some companies are so unusual or so diversified that there are no other similar companies.
- An insufficient number of data points or guideline companies exist. While there may be some information, it is not enough to form an opinion.
- It is not as flexible or adaptable as other approaches. Unlike the income approach, in the market approach it is sometimes difficult to include unique operating characteristics of the firm in the value it produces.

3. Company Description

Tencent Holdings Limited is a Chinese investment holding company whose subsidiaries provide mass media, entertainment, Internet and mobile phone value-added services, and operate online advertising services in China. Tencent is a pure Internet company, when it was born it focus on Internet industry but didn't enter into other industries. It is the fourth-largest Internet Company in the world after Google, Amazon, and EBay, as of August 2012.

Tencent was founded by Ma Huateng and Zhang Zhidong in November 1998 as Tencent Inc. Incorporated in Cayman Islands, initial funding was provided to it by venture capitalists. Tencent is one of China's first Internet companies, in February 1999 Tencent introduced its instant messaging service—QQ. The company remained unprofitable for the first three years. South African media company Naspers purchased a 46% share of Tencent in 2001. (As of 2014, it owns 34%.) Tencent Holding Ltd was listed on the Hong Kong Stock Exchange on 16 June 2004, and it was added as a Hang Seng Index Constituent Stock in 2008.

The company originally derived income solely from advertising and premium users of QQ, who pay monthly fees to receive added extras. But by 2005, charging for use of QQ mobile, its cellular value-added service, and licensing its iconic penguin character, which can be found on snack food and clothing, had also become income generators. And in 2008 Tencent was seeing profit growth from the sale of virtual goods. While Tencent's services have included online gaming since 2004, around 2007-2008 it rapidly increased its offerings by licensing South Korean games, but Tencent now makes its own games.

3.1Products of Tencent

In this part, some products of Tencent will be introduced and the product strategy also will be analyzed.

3.1.1 Products description

Tencent's diverse services include Internet value-added services (IVAS), mobile and communication value-added services (MVAS), online advertising and e-commerce transactions. Its offerings include the well-known instant messenger Tencent QQ and one of the largest web portals in China, QQ.com. Mobile chat service WeChat has helped bolster Tencent's continued expansion into smart phone services.

IVAS

A. Instant messaging (IM)—core business.

QQ is the largest online community in China. MAU reached 798 million at the end of 2012, representing a growth rate of 11% compared with last year, which was broadly in line with the Internet user growth rate in China. PCU increased by 16% to 176 million at the end of 2012. Driven by increasing adoption of the mobile Internet, our mobile user base grew more rapidly compared to our PC user base. Weixin enjoyed substantial user growth in 2012, thanks to its innovative features and compelling user experience. It has quickly become a major communications and social platform for smart phone users in China. Beyond the domestic market, we have launched the product “WeChat” which leverages Weixin’s technology to serve the international markets. Recently, total registered user accounts of Weixin and WeChat have exceeded 300 million.

B. Social platform.

Tencent social networks registered solid growth, with increase in the scale and activity of mobile users. MAU of Qzone increased by 9% to 603 million at the end of 2012, while MAU of Pengyou increased by 22% to 247 million. Weixin Moments, a feature within Weixin which enables users to share experiences with friends on their Weixin contact lists, enjoyed rapid user adoption.

C. Media Platforms.

In 2012, Tencent media platforms expanded further with enhanced media influence and brand

position. QQ.com maintained its position as the most-visited portal in China with solid traffic growth, leveraging the opportunities presented by the London Olympic Games. Tencent extended its vertical channels, such as news and finance, to the mobile Internet via vertical-specific smart phone applications. Tencent Microblog reached 87 million DAU at the end of 2012. As the growth of microblog users in China decelerates, Tencent is exploring integration points between Tencent Microblog and Weixin to deepen our differentiation.

D. Virtual Services—main revenues source.

Tencent operate multiple open platforms providing third-party application developers with access to a large user base across our diverse product portfolio, including Qzone, QQ Game, and Tencent Microblog. In 2012, Tencent increased significantly the number of third-party applications on our open platforms by collaborating with more developers and enhancing the support we provide to them.

E. Online games.

Tencent online game business extended its domestic leadership, supported by growth in our major titles and contribution from self-developed titles launched during the year.

MVAS

In 2012, MVAS business registered steady revenue increase, mainly driven by bundled SMS packages and mobile games. In addition, mobile books registered strong revenue growth, albeit from a relatively low base.

During the year 2012, Tencent increased its focus on mobile games and expanded our game portfolio as we believe that the sector presents one of the key business opportunities on the mobile Internet. In addition, its mobile browser and mobile security product enhanced their market positions with significant user growth.

Online Advertising

Tencent online advertising business achieved strong revenue growth in 2012, underpinned by growth in brand display advertising and performance-based social advertising. In addition,

search advertising registered growth.

In brand display advertising, Tencent achieved healthy revenue growth and market share gains against a challenging macro environment. In performance-based social advertising, Tencent benefited significantly from the launch of our targeted advertising system on social networks, which was well-received by advertisers such as e-Commerce companies and application developers. In search advertising, Tencent benefited from the rapid growth of e-Commerce search and new contributions from mobile search.

E-Commerce Transactions

In 2012, Tencent stepped up the scale of B2C e-Commerce transactions business in certain product categories, such as consumer electronics, and registered significant growth in transaction volume. During the year, we expanded our geographical coverage and increased investments in logistics and fulfillment infrastructure. Our business structure was also re-organized to enable more focused and efficient management.

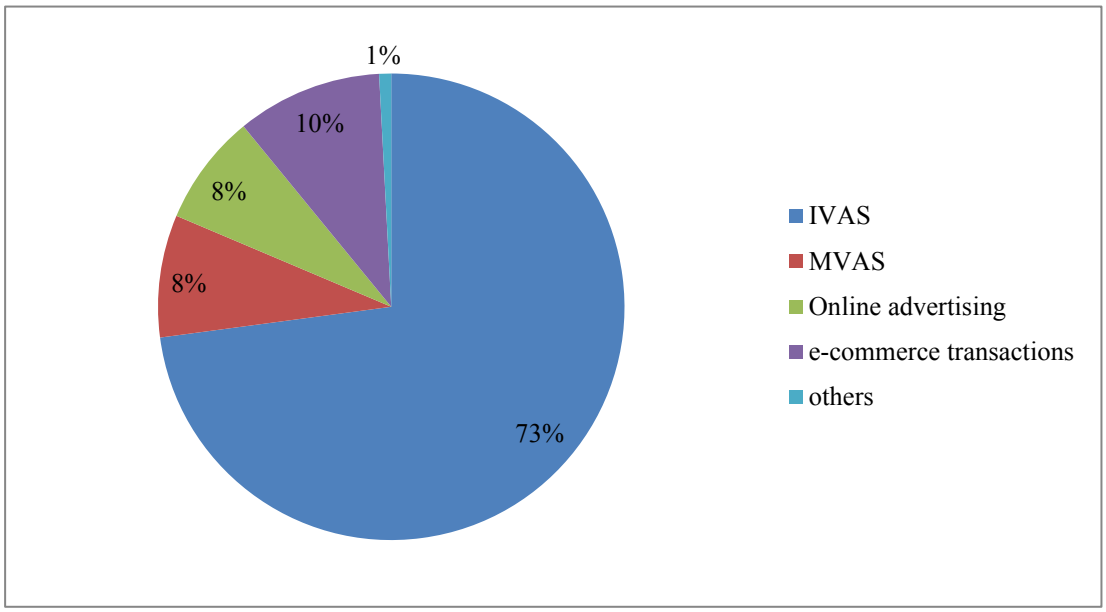
3.1.2 Product analysis

Tencent is one of the most diversified companies. There are some advantages compared with other Internet companies:

- Monopoly market share in China—82.9% at the end of 2012
- The largest Internet communication in China—more than 798.2 million monthly active accounts in December 2012 and peak simultaneous online user account (for the quarter) at the end of 2012
- Plenty of value added products and services, and strongly connected to IM plat—QQ
- A very strong brand—QQ and its mascot little penguin

Total revenue of Tencent at the end of 2012 was 43,894 million, representing an increase of 54% compared to 2011. The following table shows the revenues portfolio of each kind of product at the end of 2012.

Figure 3.1: Revenues portfolios in 2012



From the figure 3.1, we know IVAS accounts for 73% of total revenues, it is the core business of Tencent. Revenue from IVAS business increased by 39% to 31,995 million at the end of 2012 because of two following main factors. First, online game revenues increased by 44% to 22,849 million because of the growth of major titles. Second, revenues from Revenues from our community and open platforms increased by 27% to 9,146 million, mainly riding on growth in platforms and QQ Membership subscription service. MVAS accounts for 8% at the end of 2012 which revenues increased by 14% to 3,723 million compared to 2011 because of the growth in revenues from mobile games and bundled SMS packages. Online advertising also accounts for 8% at the end of 2012, at the same time revenue was increased 70% to 3,382 million compared to last year driven by the new performance based social advertising and growth in video advertising.

3.2 Industry analysis

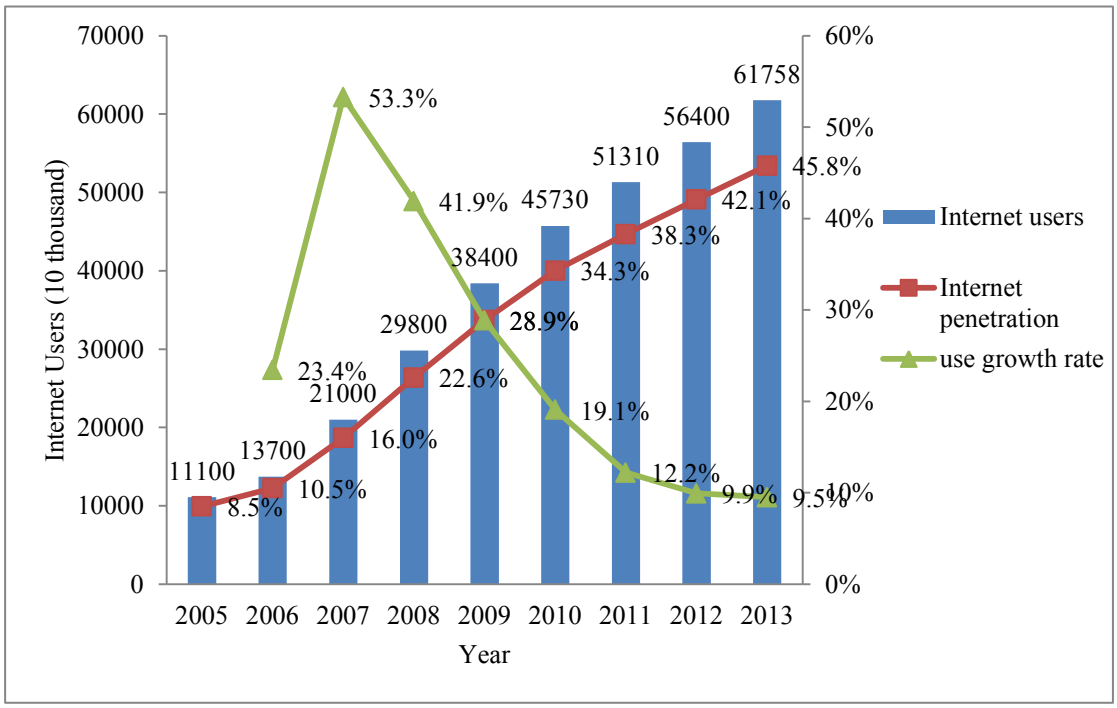
In this part, the industry where Tencent located situation will be analyzed including Internet industry and IM industry.

3.2.1 Internet industry analysis

Chinese Internet users scale into the explosive growth phase in recent years. As of December 2013, the scale of China's Internet users reached 618 million, and the added annual new Internet users was 53.6 million. Internet penetration was 45.8%, up 3.7 percentage points compared with the end of 2012, the overall growth rate of Internet users keep slowing trend.

The following figure shows the number of Internet users, the growth rate of users and Internet penetration from 2005 to 2013 in China.

Figure 3.2: Internet users and Internet penetration in China



Source: CNNIC

From the figure, we can see the internet users was increasing in the past 5 years and in recent years the growth rate was became steady. In recent years, Chinese Internet users increased very quickly primarily due to the following four factors. First, Chinese government developed a series of policy guidelines in the field of information technology and continued to strengthen the construction of network infrastructure, providing better conditions for Internet access to network infrastructure. Second, operators and major manufacturers actively

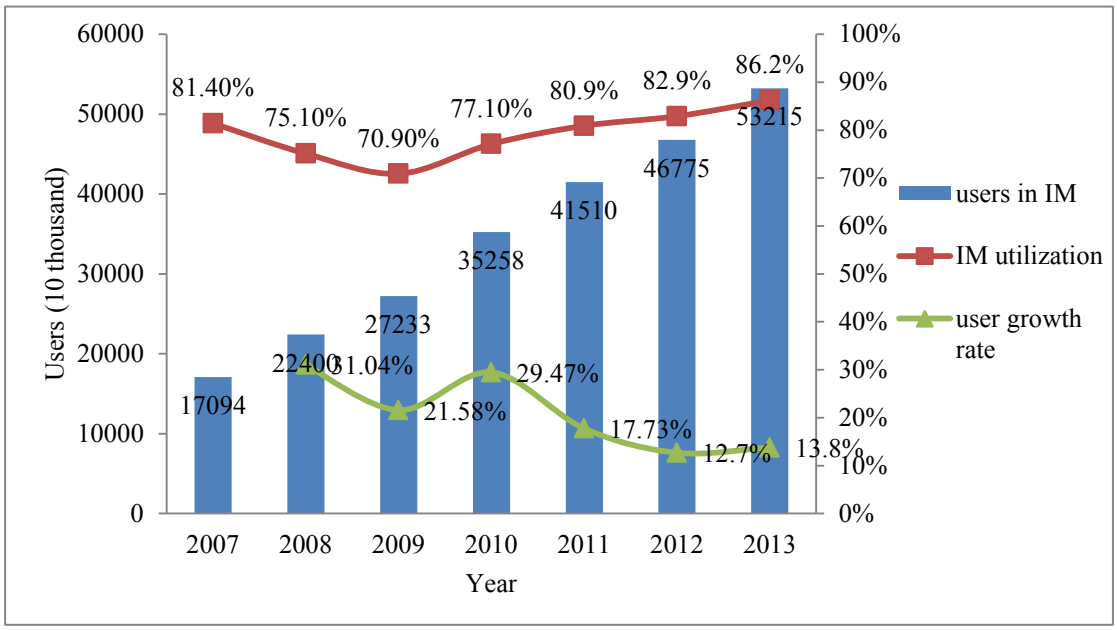
promoted the development of Internet applications, providing more network applications to accelerate the penetration of social life, such as the next taxi, payment application which attracting more people to use the Internet. Third, traditional and new media strengthened the linkage to enhance awareness of the Internet community as a whole, prompting more people to use the Internet. Last, network applications sociability and convenience of instant communication increase the stickiness of Internet users and promote the conversion of non-users to users. These series of factors promote the growth of the Internet users, especially in promoting a sustained increase in the size of the mobile phone users. In 2013 the proportion of mobile Internet users to added Internet users in China was 73.3%, higher than the proportion of the use of other devices, which means that the phone is the main driving force for the growth of Internet users in China.

3.2.2 Industry of instant messaging (IM) analysis

Tencent was started by IM, until now IM is still the core business of Tencent. Its main business—IVAS and MVAS are based on the big user group of QQ. At the same time IM is the basis to develop new business in the future because of the great user group. In 2012, there were 798.2 million active IM user accounts per month. At the end of 2013, there were 532 million IM user account and the added annual new IM accounts was 64.4 million and the annual growth rate was 13.8%. The utilization of IM accounts was 86.2% at the end of 2013, up 3.98 percentage points compared with the end of 2012. Instant messaging service was one of the most basic applications of Internet users, and its ability to direct create commercial value was limited and more commercial value from development of value-added services.

The following figure shows the number of IM user account and its growth rate and IM accounts utilization from 2007 to 2013 in China.

Figure 3.3: IM accounts and utilization



Source: CNNIC

From the figure, we can see the IM users was increasing in the past 7 years and in recent years the growth rate was became steady. Growth in the number of IM users provides a solid foundation for the development of IM industry. The advent of smart phones and the popularity of computers have brought the benefit to instant communication. At the same time, some research shows that Chinese are more like IM compared to e-mail.

Tencent is the leader in IM market in China. The following table shows effective using hour per month of some IM in China in Jan 2014.

Table 3.1: Effective using hour per month of IM in Jan 2014

	Effective using hour per month (10 thousand hours)	Effective hour rate
Tencent QQ	264,249	84.70%
Alibaba trademanager	23,887	7.70%
YY	8439	2.70%
Fetion	4652	1.50%
Qtalk	1394	0.50%
Skype	1298	0.40%
MSN	849	0.30%

Sources: http://service.iresearch.cn/others/20140305/227931.shtml

From the table, we can see effective using period was 2,642 million hours, accounts for 84.7% of total effective hours, representing the Top 1 in Chinese IM market. Alibaba trademanager effective using period was 239 million hours only accounts 7.7%, it is Top 2 in Chinese IM market. But MSN was only 4.73 million hours in China, which was Top 9. From this we know Tencent QQ was state a monopoly position in Chinese IM market.

3.3 SWOT analysis

In this part, the SWOT analysis will be used to evaluate the strengths, Weaknesses, opportunities and threats of Tencent Company. The SWOT analysis will be presented in the following table.

Table 3.2: SWOT analysis

Strengths	Weaknesses
● Huge number of registered users and huge amount of user data ● Strong influence of QQ brand for Internet users and the strong adhesive of QQ users ● Comprehensive and successful product line ● Mature Internet services experience ● Excellent R & D capability ● Experience in managing huge amounts of data	● Should have a better strategy execution ● Should have a new understanding on the nature of IM software ● Diversification business split the focus but also has little effect ● Lack of targeted product, the user needs to be shelved ● Tencent's user base makes facing turning challenges ● Exist huge challenge for Tencent to enter into not familiar industry
Opportunities	**Threats**
● Rapid development of economic ● Sustained and stable development of China's Internet industry ● More effective communications needed for enterprises ● Value of the Internet has been recognized by companies, investment in the Internet will increase ● The Internet industry value chain has been formed and applied	● More new Internet products, requires huge investment to keep up with development ● Foreign competitors cannot be ignored ● Nature of the Internet is inter-connected, Tencent's best strategy should be leader but not to be passive in the industry ● VCs support more competitors which will be the threat to Tencent

4. Valuation of Tencent Company

In this part, we focus on financial ratio analysis and valuation of the company. Some important ratios are used to assess the performance of Tencent and some difference between Tencent and traditional company are described in financial analysis. Currently 2012 annual report could be found from publicly available websites, so the base forecasted date should be December 31, 2012 in the valuation process. Two stage DCF model is used to estimate the value of the Tencent in valuation. CAPM model is used to estimate WACC of the company and finally we got the value of Tencent of three scenarios.

4.1 Financial analysis

In this part, we will focus on the financial analysis of Tencent, especially in financial ratio analysis. There are hundreds of ratios can be formed by available financial data. In this part, only four ratios were picked up, including current ratio, debt-to-equity ratio, return on asset and return on equity. And difference characteristics from traditional industry also will be analyzed in this part.

4.1.1 General analysis

In this part, we analyze general performance of Tencent, for example asset structure. The characteristics of an Internet company are different to traditional industry company. There are two main differences, the first remarkable feature of the Internet companies is the ratio of its current assets to total assets is very high, and the company's cash is abundant. The following figure shows the asset structure of Tencent.

Figure 4.1: Asset structure of Tencent

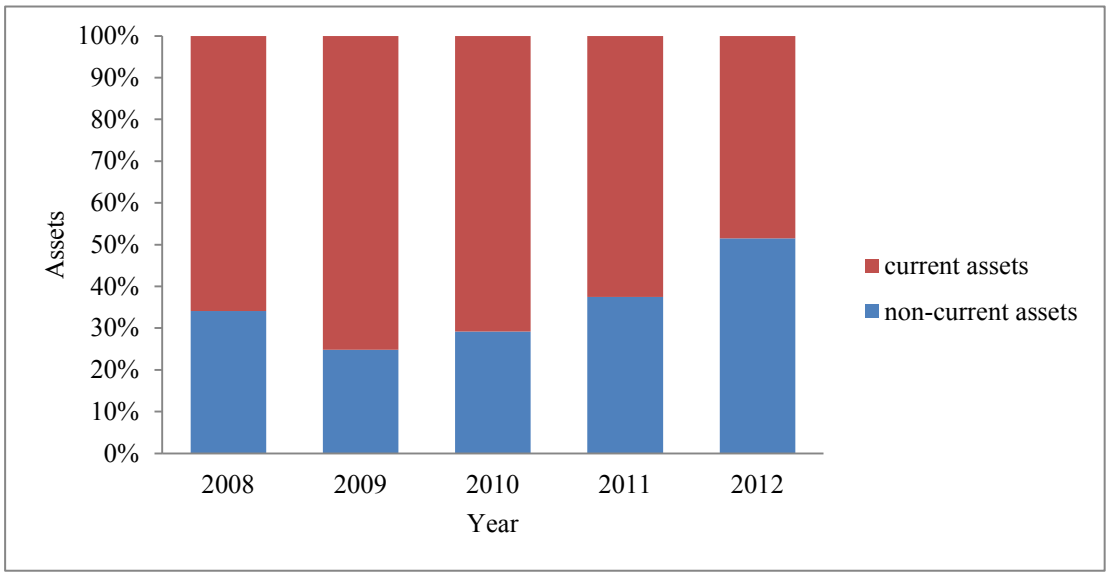


Figure 4.1 shows the asset structure of Tencent from 2008 to 2012. From this figure, we can see almost each year the ratio of current asset to total asset was higher than 60% in past 5 years except 2012. Especially in 2009, current asset was accounted about 75% to total asset. This situation was primarily driven by three factors. First, Tencent is a knowledge-based company its main products are technology and related soft product. So Tencent doesn't need much fixed asset like machines, its fixed assets are computers, cars, buildings and other like these. Second, Internet industry is a rapid developed industry, Tencent needs more cash to catch the business opportunity at any time. Third, Tencent has just a little inventory because its products are intangible.

Second characteristic for Tencent is that the debt to asset ratio is low and the ratio of current liabilities to total liabilities is high. The following figure shows the liabilities structure of Tencent and the debt to asset ratio.

Figure 4.2: Liabilities structure and debt to asset ratio

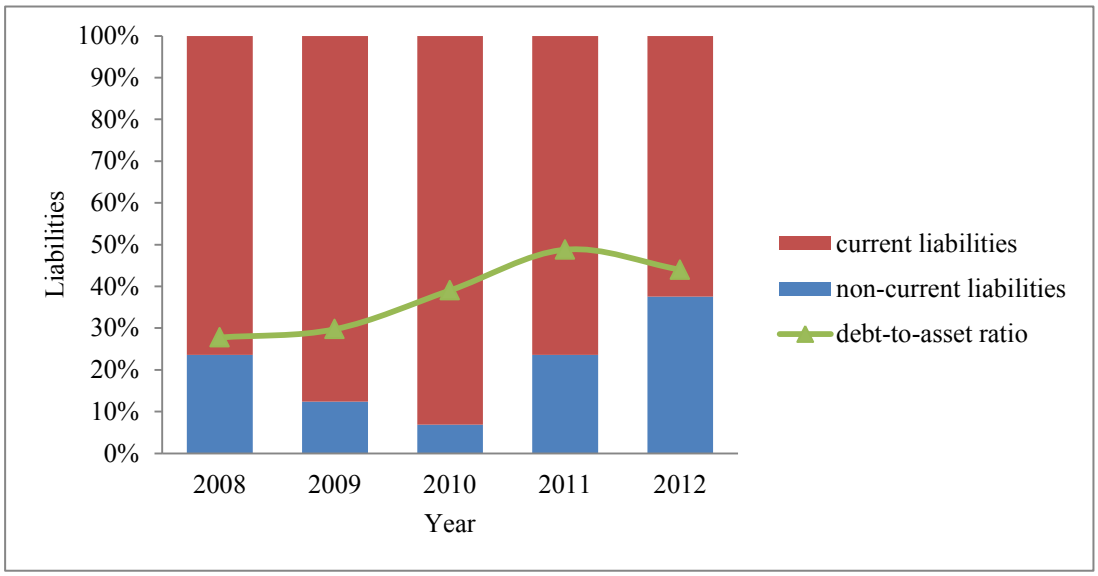


Figure 4.2 shows the liabilities structure and debt to asset ratio of Tencent from 2008 to 2012. From this figure, we can see in each year the ratio of current liabilities to total liabilities was higher than 60% in past 5 years, especially in 2010, current liabilities were accounted more than 90% to total liabilities. And the debt-to-asset ratio was less than 50% in past 5 years, especially in 2008 it was less than 30%. Because Tencent almost had no long-term credit to customer but it paid mostly in cash, its current assets turnover is generally smoothly. Even more it could occupy money through borrowing money, so Tencent rarely needs short-term borrowings. Another reason is Tencent could get sufficient cash flow to meet the needs of capital expenditures, such as research and development expenses through business operating, so Tencent doesn't need long-term loans or issue bonds. This characteristic represents the structure of Tencent is relatively simple.

4.1.2 Financial ratio analysis

In this part, four important financial ratios will be analyzed, including current ratio, debt-to-equity ratio, ROA and ROE.

Table 4.1: Current ratio in history (thousand RMB)

	2008	2009	2010	2011	2012
Current asset	6,495,861	13,156,942	25,373,741	35,503,488	36,509,148
Current liabilities	2,091,597	4,563,079	13,022,045	21,183,348	20,664,996
Current ratio	3.11	2.88	1.95	1.68	1.77

Figure 4.3: Current ratio trend in history and three forecasted scenario

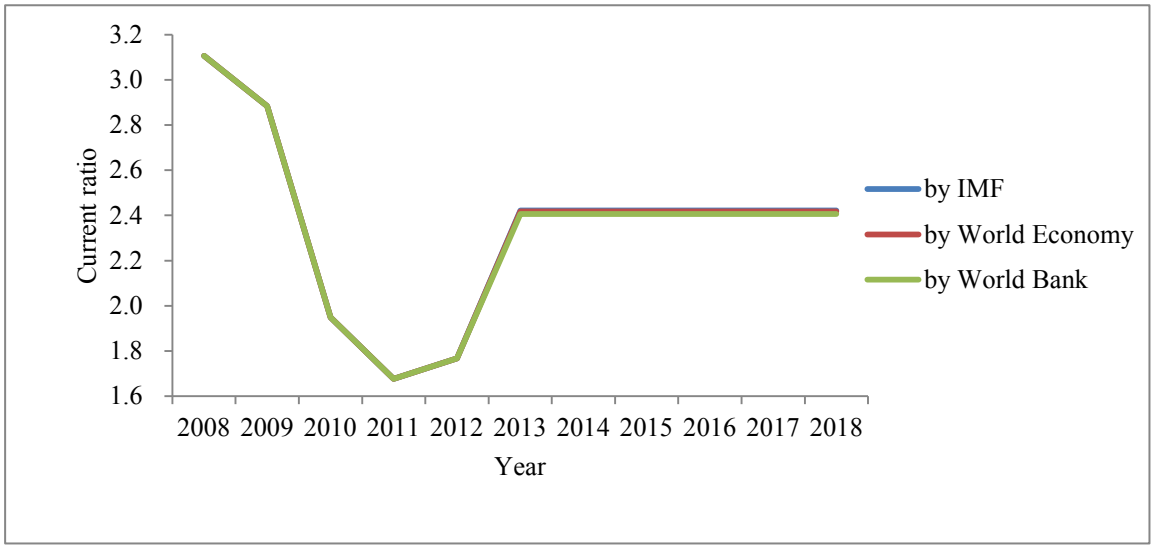


Table 4.1 shows the current ratio of Tencent from 2008 to 2012 and it calculated based on formula (2.1). Figure 4.3 shows the trend of current ratio from historical year 2008 to forecasted year 2018 of three scenarios. From 2008 to 2011 current ratio was decreasing primarily driving by the rapid increase of current liabilities which means Tencent had worse ability to satisfy its current liabilities with its current asset. Tencent should consider the risk this financial situation bringing, and reduce the financial risk. But in 2012, current ratio increased because of the decrease of current liabilities which was primarily driven by the decrease of short term borrowings of 6,922 million Yuan. In the future, current ratio will keep in the same level we got this result from 3 forecasted scenarios.

Table 4.2: Debt-to-equity ratio in history (thousand RMB)

	2008	2009	2010	2011	2012
Total liabilities	2,736,225	5,207,112	13,989,256	27,716,021	33,107,545
Total shareholder's equity	7,020,926	12,178,507	21,756,946	28,463,834	41,297,507
Debt-to-equity ratio	39.0%	42.8%	64.3%	97.4%	80.2%

Figure 4.4: Debt-to-equity ratio trend in history and three forecasted scenario

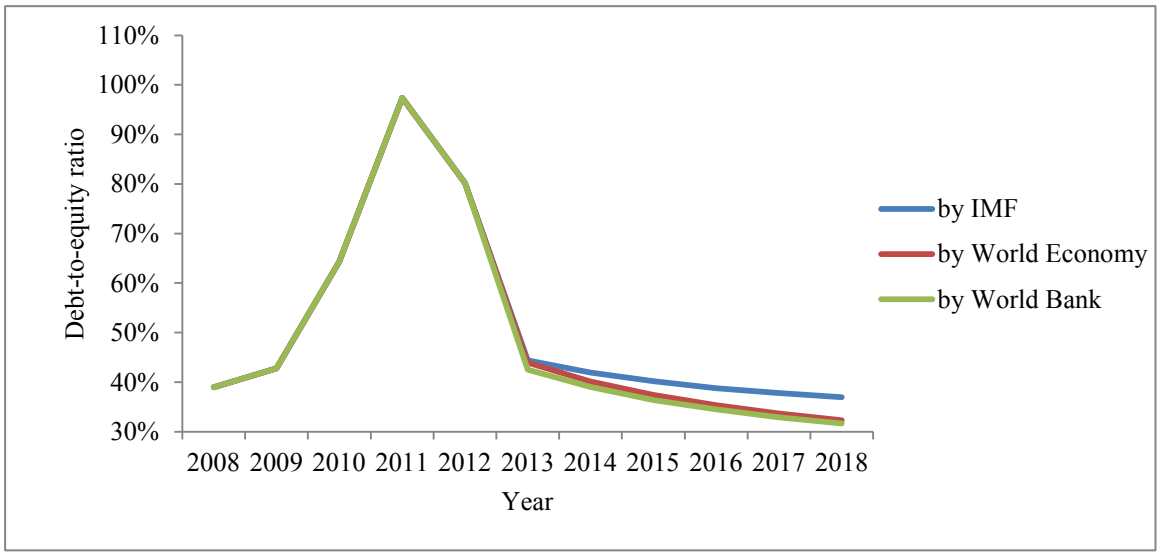


Table 4.2 shows the debt-to-equity ratio of Tencent from 2008 to 2012 and it calculated based on formula (2.2). Figure 4.4 shows the trend of debt-to-equity ratio from 2008 to forecasted year 2018 of three scenarios. From 2008 to 2011 debt-to-equity ratio was increasing which means the financial risk of borrowing money for Tencent was increasing because of the rapid increase of total liabilities. The increase of total liabilities was driven by the increase of short term borrowing, especially in 2010 short term borrowing increased 5,097 million Yuan. But in 2012 debt-to-equity decreased caused by the increase of shareholders' equity. The increase of equity was driven by growth in retained earnings. In the future the debt-to-equity will decrease in three scenarios because of rapid increase of equity especially in retained earnings.

Table 4.3: ROA in history (thousand RMB)

	2008	2009	2010	2011	2012
Net profit	2,815,650	5,221,611	8,115,209	10,224,831	12,784,852
Total asset	9,855,557	17,505,765	35,830,114	56,804,365	75,255,811
Average total asset		13,680,661	26,667,940	46,317,240	66,030,088
ROA		38.2%	30.4%	22.1%	19.4%

Figure 4.5: ROA trend in history and three forecasted scenario

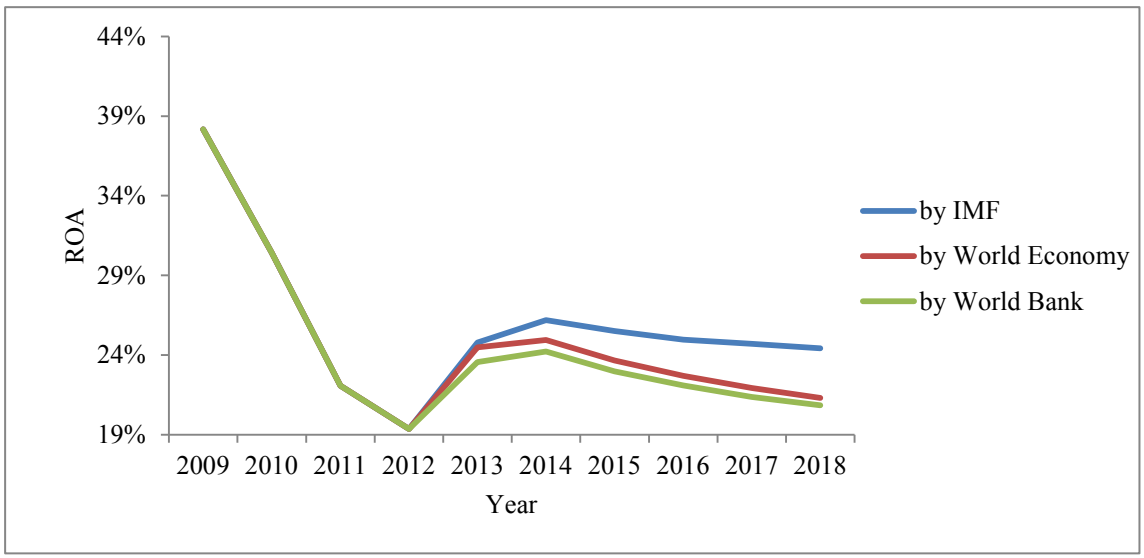


Table 4.3 shows the return on asset of Tencent from 2008 to 2012 and it calculated based on formula (2.3). Figure 4.5 shows the trend of return on asset from historical year 2008 to forecasted year 2018 of three scenarios. In the past 4 years, return on asset was decreasing because there was no much liability and cannot bring leverage. The capital efficiency was decrease with the expansion of Tencent. Tencent should consider how to make more profit under the situation of keeping the capital. In the beginning of the future, return on asset will increase because of the high growth of net profit but finally return on asset of Tencent will decrease in the long run. So Tencent needs some creations or revolutions to promote this situation in the future.

Table 4.4: ROE in history (thousand RMB)

	2009	2010	2011	2012
Average shareholder's equity	9,599,717	16,967,727	25,110,390	34,880,671
ROE	54.4%	47.8%	40.7%	36.7%

Figure 4.6: ROE trend in history and three forecasted scenario

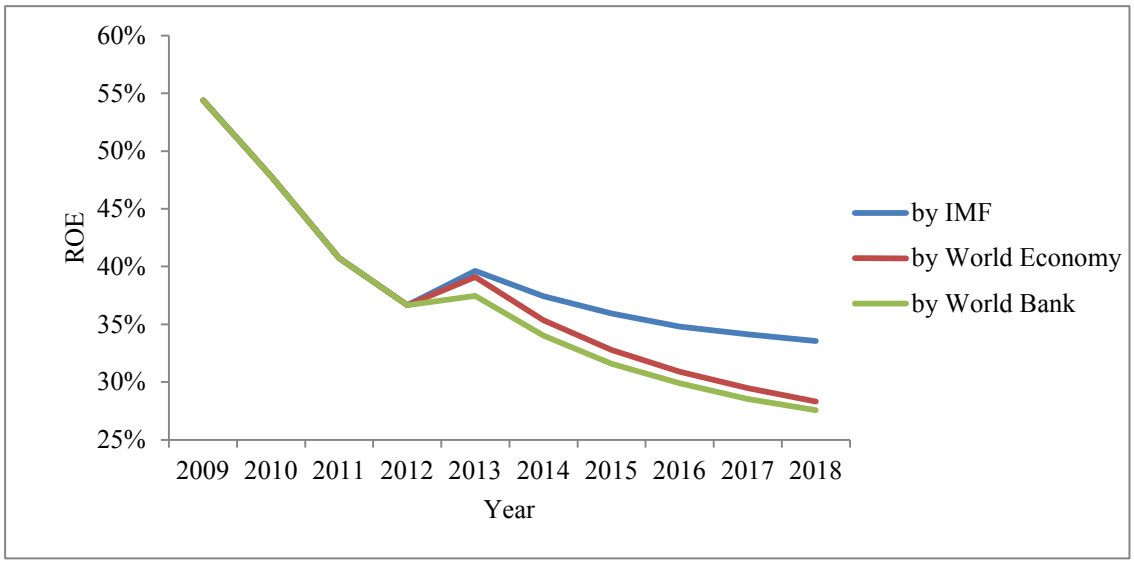


Table 4.4 shows the return on equity of Tencent from 2008 to 2012 and it calculated based on formula (2.4). Figure 4.6 shows the trend of return on equity from historical year 2008 to forecasted year 2018 of three scenarios. In the past 4 years, return on equity was decreasing because of the rapid increase of total equity. ROE used to measure return to investors, it also can used to evaluate the performance of corporate management. ROA decrease means the return to investors was decrease and worse performance of corporate management. Tencent should consider how to get more return in the future. At the beginning of future return on equity will increase but finally it will decrease in the long run which is similar to the tendency of return on asset.

In conclusion, in the historical years the current ratio was decreasing represents that Tencent had worse ability to satisfy its current liabilities with its current asset, so Tencent should consider the risk this financial situation bringing and reduce the financial risk. From 2008 to 2011 debt-to-equity ratio was increasing represents that the financial risk of borrowing money for Tencent was increasing, but in 2012 Tencent has taken some measures to reduce the debt-to-equity ratio. ROA and ROE were decreasing, so Tencent should consider how to make more profit.

4.2 Valuation application

In this part, we focus on the calculation of the value of Tencent. We choose DCF model to estimate the value of the company. Asset approach is only focused on the company's history, cannot objectively assess the value of Tencent. It is difficult to find comparable company or its useful data in market approach and market approach isn't suitable for companies that business operating was changing. So finally we can choose income approach. From the analysis in chapter 3, we can find that Tencent has entered into the mature stage. Tencent's growth and cash flow were become stable which are easy to predict, so DCF model was chosen to estimate the value of Tencent.

When calculate the value of company, we use two-stage model, namely the forecast period is divided into two phases. The first phase is rapid development for the company which calculating sales revenue and cash flow of the company year by year, the second phase for the company is sustainable growth phase which sales revenue and cash flow are sufficient stable and predictable so we can directly estimated its sustainable value. The value calculated by formula (2.26).

Base period is the basis of the forecast period, as it is usually the previous year of the forecast work. Currently we can get 2012 annual report from publicly available websites, so we choose December 31, 2012 as the base forecasted date. We set the first forecasting phase period is 5 years, from 2013 to 2017 and second forecasting phase period is the year 2018.

Before we calculate the value of the company, we should forecast the WACC and FCFF. When we forecast FCFF, we should forecast revenues at first, then use the forecasted revenues to make the financial plan which including forecasting the EBIT, tax rate, depreciation, investment, net working capital change and other items in income statement and balance sheet in the future. When we forecast the WACC, we should forecast the cost of equity and the cost of debt. And then we use forecasted balance sheet to calculate WACC.

4.2.1 Financial plan

In this part, the financial plan will be created according chapter 2.4 in order to calculate the whole Income Statement and Balance Sheet to estimate the value of Tencent. At first, we should forecast the revenues of Tencent.

4.2.1.1 Revenues prediction

We choose regression model to forecast the revenues, and we choose GDP of China as the independent variable. From the regression model we can know how the revenue of Tencent changing when changing the GDP of China. We choose data from 2003 to 2012 of GDP and revenues to get the regression model by using Eviews7:

$$ln(revenues) = -37.16 + 3.076 \cdot ln(GDP) \tag{4.1}$$

At the same time we get value of some important indicators shows in the following figure 4.1.

Figure 4.7: Regression model

Equation: EQ01 Workfile: TENCENT::Untitled\

View | Proc | Object | Print | Name | Freeze | Estimate | Forecast | Stats | Resids

Dependent Variable: LOG(REVENUES)
Method: Least Squares
Date: 03/19/14 Time: 07:33
Sample: 2003 2012
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-37.15866	1.921447	-19.33889	0.0000
LOG(GDP)	3.076144	0.112143	27.43053	0.0000

R-squared	0.989480	Mean dependent var	15.53048
Adjusted R-squared	0.988165	S.D. dependent var	1.426055
S.E. of regression	0.155141	Akaike info criterion	-0.712108
Sum squared resid	0.192550	Schwarz criterion	-0.651591
Log likelihood	5.560539	Hannan-Quinn criter.	-0.778495
F-statistic	752.4339	Durbin-Watson stat	1.769188
Prob(F-statistic)	0.000000		

From this figure, we can see P-value is 0 at the significance level of 5% which is less than 0.05 and the calculation T value of coefficient of independent variable is 3.07 which higher

than critical T value which is equal to 2.75. From these 2 points we can say this regression model is reliable. Then we use this regression model and to forecast the revenues as following table and figure.

Table 4.5: Forecasting revenues of 3 scenarios (revenues in thousand RMB, GDP in million RMB)

	2013	2014	2015	2016	2017	2018
GDP (IMF)	57,187,929	62,912,943	69,171,773	75,936,914	83,469,246	91,630,925
Revenues	53,062,351	71,162,053	95,268,972	126,943,147	169,807,713	226,250,308
GDP(World Economy)	56,884,500	61,435,300	66,258,000	71,359,900	76,747,600	82,426,900
Revenues	52,201,056	66,144,913	83,455,804	104,847,319	131,158,368	163,368,861
GDP Growth Rate	7.70%	7.70%	7.50%	7.50%	7.30%	7.30%
GDP(World Bank)	55,946,930	60,254,843	64,773,957	69,632,003	74,715,140	80,169,345
Revenues	49,599,425	62,312,732	77,838,375	97,232,337	120,764,665	149,992,325

Figure 4.8: Forecasting revenues trend

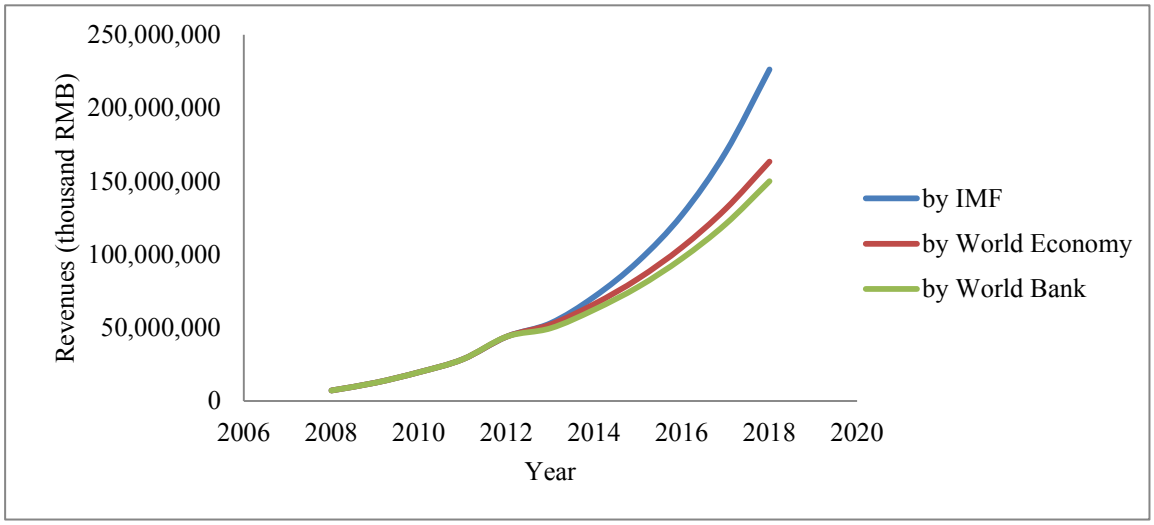


Table 4.5 shows the amount of GDP by financial institutions and the forecasted value of revenue calculated based on regression model. Figure 4.8 shows the tendency of revenues from historical 2008 to the future year 2018 of 3 scenarios forecasted according from IMF, World Economy and World Bank. All these 3 scenarios have the tendency of increase because the GDP has the tendency of increase. Because these three institutions all expect that the economy will develop well in China, but the difference is that the IMF has a more rapid increase than other scenarios.

4.2.1.2 Other items prediction

Then we use the forecasted revenues to predict other items in balance sheet and income statement and what we need to calculate FCFF. Almost all items are connected to revenues, especially in income statement. Using forecasted revenues we can get whole income statement. Then we get some other important items of all three scenarios when we calculate FCFF shows in following figures.

Figure 4.9: EBIT in three scenarios

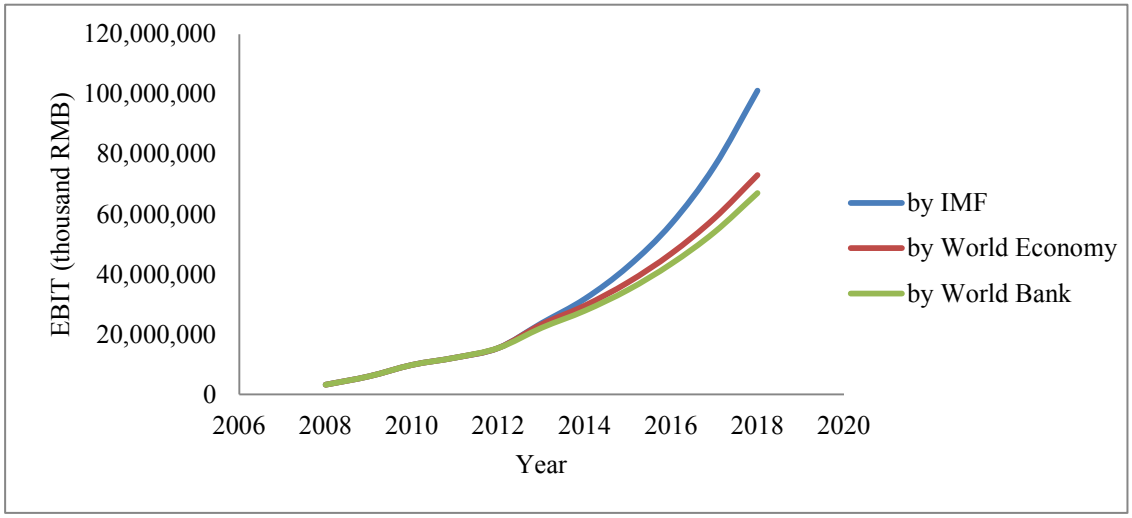


Figure 4.9 shows the tendency of EBIT of three scenarios. Compared with figure 4.8 we can see the tendency line is very similar to revenues because EBIT is strongly connected to revenues. In historical years, EBIT was increasing which primarily driven by the growth of total revenues. EBIT is a very important component to estimate FCFF. EBIT is earnings before interest and tax and it is the total operating profit which we can find in income statement. In Tencent, EBIT equals to revenues minus cost of revenues which equals to the average ratio of cost of revenues to revenues in all past years times revenues minus operating expense which equals to the average ratio of operating expense to revenues in all past years times revenues.

We estimate tax rate as the average tax rate in the history. Tax rate is equals to tax divided by profit before tax, we get the estimated value of tax rate 14.31%.

Figure 4.10: △NWC in three scenarios

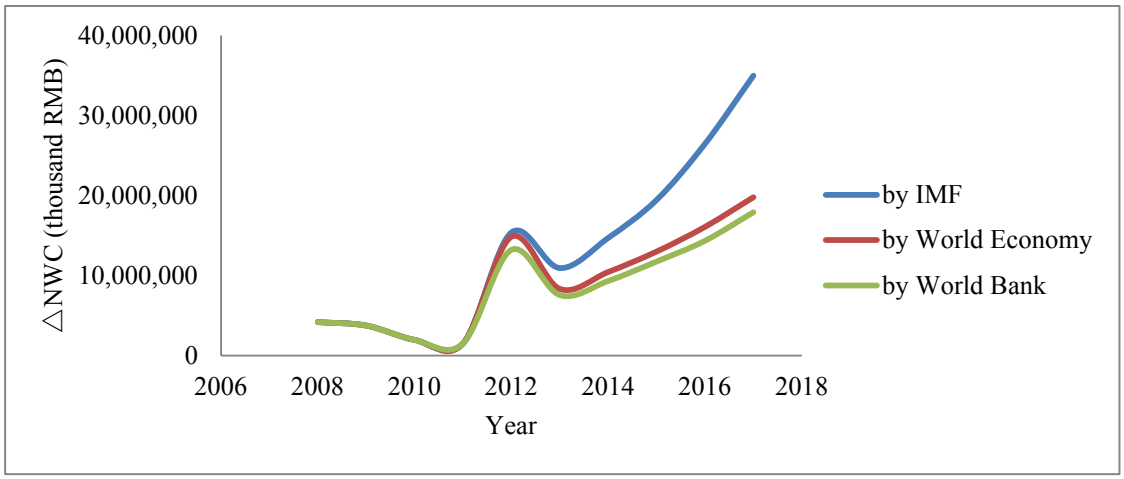


Figure 4.10 shows the tendency of △NWC in three scenarios. It was changing in historical years and it has the same trend in every scenario. △NWC is the difference between two years' net working capital which equals to current asset minus current liabilities.

Figure 4.11: Investment in three scenarios

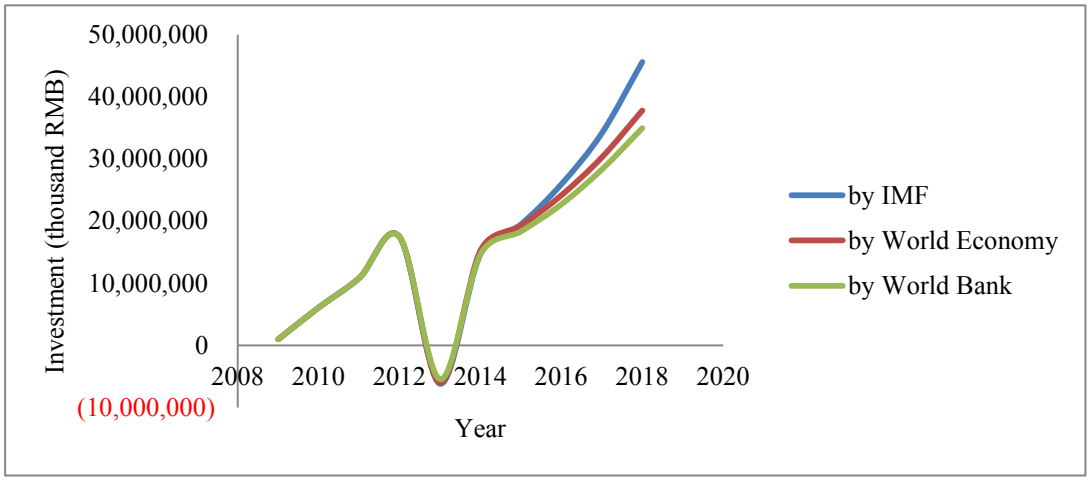


Figure 4.11 shows the trend of investment in three scenarios. It is the difference between fixed assets sold minus fixed assets purchase. In 2013, the investment is negative means the fixed assets sold is higher fixed assets purchase. We estimate that the investment as the difference between two years' fixed asset and it is the net investment but not whole investment in past years.

Figure 4.12: Depreciation in three scenarios

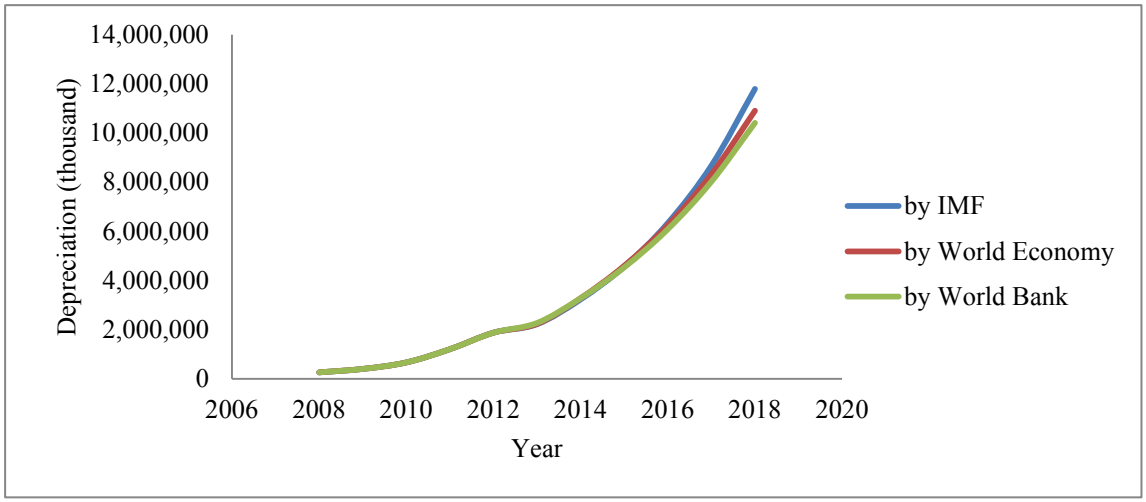


Figure 4.12 shows the forecasted value of depreciation in three scenarios. We estimate depreciation as the average ratio of depreciation to non-current assets in historical years multiple forecasted non-current asset. We can see these three lines almost overlap because the average ratio of depreciation to non-current assets is very small (just 6.84%).

From the financial plan creation, the whole forecasted Income Statement and Balance Sheet could be calculated as following tables.

Table 4.6: Income Statement based on forecasted GDP by IMF (thousand RMB)

	2013	2014	2015	2016	2017	2018
Revenues	53,062,351	71,162,053	95,268,972	126,943,147	169,807,713	226,250,308
cost of revenues	(18,051,184)	(24,208,488)	(32,409,377)	(43,184,556)	(57,766,574)	(76,967,677)
gross profit	35,011,167	46,953,565	62,859,596	83,758,591	112,041,139	149,282,631
interest income	788,730	1,057,768	1,416,098	1,886,910	2,524,058	3,363,033
other (losses)/gains, net	225,406	302,293	404,698	539,248	721,335	961,101
selling and marketing expenses	(3,214,403)	(4,310,844)	(5,771,189)	(7,689,942)	(10,286,585)	(13,705,756)
general and ministrative expenses	(9,081,844)	(12,179,685)	(16,305,685)	(21,726,853)	(29,063,304)	(38,723,691)
operating profit	23,729,056	31,823,097	42,603,518	56,767,954	75,936,643	101,177,317
finance (cost)/income, net	(368,614)	(494,349)	(661,815)	(881,849)	(1,179,621)	(1,571,716)
share of losses of associates	35,334	47,387	63,439	84,531	113,074	150,659
share of losses of jointly controlled entities	(110,485)	(148,171)	(198,366)	(264,317)	(353,568)	(471,091)
profit before income tax	23,285,292	31,227,964	41,806,776	55,706,319	74,516,528	99,285,169
income tax expense	(3,332,583)	(4,469,335)	(5,983,371)	(7,972,668)	(10,664,779)	(14,209,657)
profit for the year	19,952,709	26,758,629	35,823,406	47,733,651	63,851,749	85,075,511

Table 4.7: Income Statement based on forecasted GDP by World Economy (thousand RMB)

	2013	2014	2015	2016	2017	2018
Revenues	52,201,056	66,144,913	83,455,804	104,847,319	131,158,368	163,368,861
cost of revenues	(17,758,181)	(22,501,717)	(28,390,677)	(35,667,817)	(44,618,524)	(55,576,153)
gross profit	34,442,875	43,643,197	55,065,127	69,179,502	86,539,844	107,792,708
interest income	775,928	983,192	1,240,505	1,558,473	1,949,566	2,428,350
other (losses)/gains, net	221,748	280,980	354,516	445,386	557,155	693,983
selling and marketing expenses	(3,162,228)	(4,006,916)	(5,055,573)	(6,351,425)	(7,945,291)	(9,896,534)
general and ministrative expenses	(8,934,430)	(11,320,980)	(14,283,812)	(17,945,060)	(22,448,306)	(27,961,267)
operating profit	23,343,892	29,579,473	37,320,764	46,886,877	58,652,967	73,057,240
finance (cost)/income, net	(362,630)	(459,496)	(579,751)	(728,354)	(911,131)	(1,134,891)
share of losses of associates	34,760	44,046	55,573	69,817	87,338	108,787
share of losses of jointly controlled entities	(108,691)	(137,725)	(173,769)	(218,310)	(273,094)	(340,162)
profit before income tax	22,907,331	29,026,298	36,622,817	46,010,032	57,556,080	71,690,974
income tax expense	(3,278,489)	(4,154,233)	(5,241,444)	(6,584,939)	(8,237,405)	(10,260,386)
profit for the year	19,628,842	24,872,065	31,381,373	39,425,092	49,318,674	61,430,588

Table 4.8: Income Statement based on forecasted GDP by World Bank (thousand RMB)

	2013	2014	2015	2016	2017	2018
Revenues	49,599,425	62,312,732	77,838,375	97,232,337	120,764,665	149,992,325
cost of revenues	(16,873,137)	(21,198,054)	(26,479,694)	(33,077,290)	(41,082,710)	(51,025,614)
gross profit	32,726,288	41,114,678	51,358,681	64,155,047	79,681,955	98,966,711
interest income	737,257	926,230	1,157,006	1,445,282	1,795,072	2,229,518
other (losses)/gains, net	210,696	264,702	330,654	413,038	513,003	637,160
selling and marketing expenses	(3,004,626)	(3,774,771)	(4,715,281)	(5,890,126)	(7,315,663)	(9,086,212)
general and ministrative expenses	(8,489,150)	(10,665,086)	(13,322,365)	(16,641,723)	(20,669,380)	(25,671,817)
operating profit	22,180,464	27,865,752	34,808,695	43,481,519	54,004,986	67,075,361
finance (cost)/income, net	(344,557)	(432,874)	(540,728)	(675,454)	(838,928)	(1,041,967)
share of losses of associates	33,028	41,494	51,832	64,747	80,417	99,879
share of losses of jointly controlled entities	(103,274)	(129,746)	(162,073)	(202,454)	(251,452)	(312,309)
profit before income tax	21,765,660	27,344,626	34,157,727	42,668,357	52,995,022	65,820,964
income tax expense	(3,115,093)	(3,913,553)	(4,888,641)	(6,106,680)	(7,584,628)	(9,420,273)
profit for the year	18,650,567	23,431,073	29,269,085	36,561,677	45,410,394	56,400,691

Table 4.9: Balance Sheet based on forecasted GDP by IMF (thousand RMB)

	2013	2014	2015	2016	2017	2018
assets						
fixed assets	9,635,765	12,922,549	17,300,202	23,052,019	30,835,935	41,085,529
construction in progress	609,217	817,022	1,093,798	1,457,454	1,949,588	2,597,614
investment properties	55,827	74,869	100,232	133,556	178,654	238,037
land use rights	984,037	1,173,636	1,363,234	1,552,832	1,742,430	1,932,029
intangible assets	5,658,174	6,597,273	7,536,372	8,475,471	9,414,570	10,353,669
interests in associates	4,853,337	6,508,822	8,713,756	11,610,828	15,531,426	20,693,936
investment in jointly controlled entities	119,802	160,667	215,095	286,607	383,385	510,819
deferred income tax assets	143,850	118,793	93,737	68,680	43,624	18,567
available-for-sale financial assets	8,681,233	11,642,424	15,586,422	20,768,456	27,781,286	37,015,543
prepayments, deposits and other assets	1,607,138	2,155,337	2,885,481	3,844,820	5,143,091	6,852,609
long-term deposits	-	-	-	-	-	-
other asset	227,399	5,118,561	11,893,673	21,478,085	33,890,402	51,213,070
non-current assets	32,575,779	47,289,953	66,782,001	92,728,808	126,894,391	172,511,422
inventories	-	-	-	-	-	-
accounts receivable	4,755,962	6,378,232	8,538,928	11,377,874	15,219,811	20,278,743
prepayments, deposits and other assets	2,904,812	3,895,651	5,215,345	6,949,296	9,295,847	12,385,705
short-term deposits	20,040,850	26,876,834	35,981,654	47,944,512	64,133,812	85,451,329
restricted cash	2,233,049	2,994,748	4,009,251	5,342,211	7,146,102	9,521,403
cash and cash equivalents	23,261,725	31,196,359	41,764,465	55,649,940	74,441,111	99,184,684
current assets	53,196,398	71,341,823	95,509,642	127,263,832	170,236,683	226,821,865
total assets	85,772,177	118,631,776	162,291,643	219,992,640	297,131,075	399,333,286
equity						
share capital	200	201	202	203	204	205
share premium	3,311,185	3,742,381	4,173,576	4,604,771	5,035,966	5,467,162
shares held for share award scheme	(828,878)	(990,292)	(1,151,705)	(1,313,119)	(1,474,533)	(1,635,947)
other reserves	954,946	1,094,195	1,233,444	1,372,693	1,511,942	1,651,191
retained earnings	55,976,407	79,723,741	111,515,743	153,877,665	210,543,829	286,045,328
equity attributed to the company's equity holders	59,413,860	83,570,226	115,771,260	158,542,213	215,617,408	291,527,939
non-controlling interests	-	-	-	-	-	-
total equity	59,413,860	83,570,226	115,771,260	158,542,213	215,617,408	291,527,939
liabilities						
borrowings	-	-	-	-	-	-
long-term notes payable	-	-	-	-	-	-
deferred income tax liabilities	1,724,354	2,312,535	3,095,932	4,125,240	5,518,199	7,352,399
long-term payables	2,663,876	3,572,531	4,782,765	6,372,896	8,524,815	11,358,389
non-current liabilities	4,388,230	5,885,066	7,878,697	10,498,135	14,043,014	18,710,788
accounts payable	3,556,832	4,770,077	6,385,993	8,509,150	11,382,413	15,165,827
other payables and accruals	7,900,905	10,595,923	14,185,407	18,901,645	25,284,114	33,688,332
derivative financial instruments	-	-	-	-	-	-
borrowings	1,368,703	1,660,299	1,951,894	2,243,489	2,535,085	2,826,680
current income tax liabilities	680,331	912,394	1,221,477	1,627,583	2,177,165	2,900,835
other tax liabilities	649,136	758,176	867,217	976,257	1,085,298	1,194,338
deferred revenue	7,814,179	10,479,615	14,029,699	18,694,167	25,006,579	33,318,546
current liabilities	21,970,086	29,176,484	38,641,686	50,952,291	67,470,653	89,094,559
total liabilities	26,358,316	35,061,550	46,520,383	61,450,427	81,513,666	107,805,347
total euity and liabilities	85,772,177	118,631,776	162,291,643	219,992,640	297,131,075	399,333,286

Table 4.10: Balance Sheet based on forecasted GDP by World Economy (thousand RMB)

	2013	2014	2015	2016	2017	2018
assets						
fixed assets	9,479,360	12,011,470	15,155,011	19,039,566	23,817,475	29,666,683
construction in progress	599,328	759,420	958,169	1,203,768	1,505,849	1,875,663
investment properties	55,827	74,869	100,232	133,556	178,654	238,037
land use rights	984,037	1,173,636	1,363,234	1,552,832	1,742,430	1,932,029
intangible assets	5,658,174	6,597,273	7,536,372	8,475,471	9,414,570	10,353,669
interests in associates	4,774,558	6,049,930	7,633,267	9,589,838	11,996,372	14,942,498
investment in jointly controlled entities	117,858	149,339	188,423	236,720	296,124	368,848
deferred income tax assets	143,850	118,793	93,737	68,680	43,624	18,567
available-for-sale financial assets	8,540,322	10,821,598	13,653,736	17,153,481	21,458,084	26,727,862
prepayments, deposits and other assets	1,581,052	2,003,380	2,527,687	3,175,588	3,972,490	4,948,073
long-term deposits	-	-	-	-	-	-
other asset	822,376	8,296,945	18,092,445	30,837,897	47,311,715	68,476,156
non-current assets	32,756,740	48,056,652	67,302,312	91,467,397	121,737,386	159,548,083
inventories	-	-	-	-	-	-
accounts receivable	4,678,764	5,928,547	7,480,117	9,397,432	11,755,683	14,642,699
prepayments, deposits and other assets	2,857,662	3,620,996	4,568,652	5,739,696	7,180,051	8,943,362
short-term deposits	19,715,552	24,981,936	31,519,999	39,599,251	49,536,538	61,701,955
restricted cash	2,196,803	2,783,609	3,512,112	4,412,341	5,519,602	6,875,132
cash and cash equivalents	22,884,147	28,996,921	36,585,752	45,963,466	57,497,828	71,618,417
current assets	52,332,927	66,312,009	83,666,631	105,112,186	131,489,702	163,781,566
total assets	85,089,667	114,368,661	150,968,943	196,579,583	253,227,089	323,329,649
equity						
share capital	200	201	202	203	204	205
share premium	3,311,185	3,742,381	4,173,576	4,604,771	5,035,966	5,467,162
shares held for share award scheme	(828,878)	(990,292)	(1,151,705)	(1,313,119)	(1,474,533)	(1,635,947)
other reserves	954,946	1,094,195	1,233,444	1,372,693	1,511,942	1,651,191
retained earnings	55,688,986	77,762,062	105,611,917	140,600,288	184,368,863	238,886,331
equity attributed to the company's equity holders	59,126,440	81,608,547	109,867,433	145,264,836	189,442,442	244,368,942
non-controlling interests	-	-	-	-	-	-
total equity	59,126,440	81,608,547	109,867,433	145,264,836	189,442,442	244,368,942
liabilities						
borrowings	-	-	-	-	-	-
long-term notes payable	-	-	-	-	-	-
deferred income tax liabilities	1,696,365	2,149,495	2,712,042	3,407,197	4,262,221	5,308,957
long-term payables	2,620,637	3,320,657	4,189,711	5,263,624	6,584,511	8,201,567
non-current liabilities	4,317,001	5,470,151	6,901,754	8,670,821	10,846,732	13,510,524
accounts payable	3,499,099	4,433,772	5,594,142	7,028,041	8,791,701	10,950,809
other payables and accruals	7,772,659	9,848,879	12,426,444	15,611,609	19,529,285	24,325,379
derivative financial instruments	-	-	-	-	-	-
borrowings	1,368,703	1,660,299	1,951,894	2,243,489	2,535,085	2,826,680
current income tax liabilities	669,288	848,067	1,070,016	1,344,285	1,681,628	2,094,610
other tax liabilities	649,136	758,176	867,217	976,257	1,085,298	1,194,338
deferred revenue	7,687,341	9,740,771	12,290,043	15,440,245	19,314,918	24,058,367
current liabilities	21,646,226	27,289,963	34,199,756	42,643,926	52,937,914	65,450,183
total liabilities	25,963,228	32,760,115	41,101,510	51,314,747	63,784,646	78,960,707
total euity and liabilities	85,089,667	114,368,661	150,968,943	196,579,583	253,227,089	323,329,649

Table 4.11: Balance Sheet based on forecasted GDP by World Bank (thousand RMB)

	2013	2014	2015	2016	2017	2018
assets						
fixed assets	9,006,921	11,315,572	14,134,924	17,656,736	21,930,048	27,237,594
construction in progress	569,459	715,422	893,674	1,116,339	1,386,518	1,722,085
investment properties	55,827	74,869	100,232	133,556	178,654	238,037
land use rights	984,037	1,173,636	1,363,234	1,552,832	1,742,430	1,932,029
intangible assets	5,658,174	6,597,273	7,536,372	8,475,471	9,414,570	10,353,669
interests in associates	4,536,601	5,699,421	7,119,470	8,893,335	11,045,714	13,719,016
investment in jointly controlled entities	111,984	140,687	175,741	219,527	272,658	338,647
deferred income tax assets	143,850	118,793	93,737	68,680	43,624	18,567
available-for-sale financial assets	8,114,684	10,194,636	12,734,699	15,907,637	19,757,629	24,539,402
prepayments, deposits and other assets	1,502,254	1,887,312	2,357,548	2,944,947	3,657,688	4,542,928
long-term deposits	-	-	-	-	-	-
other asset	2,619,563	10,076,003	19,825,911	32,076,679	47,928,837	67,685,338
non-current assets	33,303,353	47,993,623	66,335,542	89,045,740	117,358,369	152,327,310
inventories	-	-	-	-	-	-
accounts receivable	4,445,581	5,585,070	6,976,629	8,714,903	10,824,098	13,443,764
prepayments, deposits and other assets	2,715,240	3,411,209	4,261,135	5,322,826	6,611,065	8,211,086
short-term deposits	18,732,955	23,534,579	29,398,380	36,723,187	45,610,993	56,649,839
restricted cash	2,087,317	2,622,337	3,275,711	4,091,876	5,082,199	6,312,201
cash and cash equivalents	21,743,632	27,316,951	34,123,156	42,625,174	52,941,387	65,754,348
current assets	49,724,724	62,470,147	78,035,011	97,477,966	121,069,742	150,371,238
total assets	83,028,077	110,463,771	144,370,552	186,523,706	238,428,111	302,698,548
equity						
share capital	200	201	202	203	204	205
share premium	3,311,185	3,742,381	4,173,576	4,604,771	5,035,966	5,467,162
shares held for share award scheme	(828,878)	(990,292)	(1,151,705)	(1,313,119)	(1,474,533)	(1,635,947)
other reserves	954,946	1,094,195	1,233,444	1,372,693	1,511,942	1,651,191
retained earnings	54,820,802	75,615,048	101,590,323	134,037,515	174,337,630	224,391,243
equity attributed to the company's equity holders	58,258,255	79,461,533	105,845,840	138,702,063	179,411,209	229,873,854
non-controlling interests	-	-	-	-	-	-
total equity	58,258,255	79,461,533	105,845,840	138,702,063	179,411,209	229,873,854
liabilities						
borrowings	-	-	-	-	-	-
long-term notes payable	-	-	-	-	-	-
deferred income tax liabilities	1,611,820	2,024,961	2,529,494	3,159,735	3,924,459	4,874,263
long-term payables	2,490,028	3,128,271	3,907,701	4,881,331	6,062,719	7,530,028
non-current liabilities	4,101,848	5,153,232	6,437,195	8,041,066	9,987,178	12,404,291
accounts payable	3,324,708	4,176,897	5,217,599	6,517,599	8,094,999	10,054,164
other payables and accruals	7,385,280	9,278,273	11,590,017	14,477,749	17,981,678	22,333,633
derivative financial instruments	-	-	-	-	-	-
borrowings	1,368,703	1,660,299	1,951,894	2,243,489	2,535,085	2,826,680
current income tax liabilities	635,932	798,934	997,993	1,246,650	1,548,366	1,923,105
other tax liabilities	649,136	758,176	867,217	976,257	1,085,298	1,194,338
deferred revenue	7,304,214	9,176,428	11,462,798	14,318,832	17,784,299	22,088,484
current liabilities	20,667,974	25,849,005	32,087,518	39,780,577	49,029,724	60,420,403
total liabilities	24,769,821	31,002,237	38,524,713	47,821,643	59,016,902	72,824,694
total euity and liabilities	83,028,077	110,463,771	144,370,552	186,523,706	238,428,111	302,698,548

And from these forecasted income statements and balances, the FCFF for Tencent could be calculated based on the formula (2.10) and the result of calculations for each scenario is presented as following tables.

Table 4.12: FCFF by IMF

	2013	2014	2015	2016	2017	2018
EBIT	23,729,056	31,823,097	42,603,518	56,767,954	75,936,643	101,177,317
t	14.31%					
NWC	31,226,312	42,165,339	56,867,956	76,311,541	102,766,030	137,727,306
△NWC	15,382,160	10,939,028	14,702,616	19,443,585	26,454,489	34,961,275
INV	(6,170,884)	14,714,174	19,492,047	25,946,807	34,165,584	45,617,030
DEP	2,226,558	3,232,273	4,564,557	6,338,024	8,673,245	11,791,174
FCFF	13,348,245	4,847,658	6,876,010	9,590,976	13,121,789	17,909,724

Table 4.13: FCFF by World Economy

	2013	2014	2015	2016	2017	2018
EBIT	23,343,892	29,579,473	37,320,764	46,886,877	58,652,967	73,057,240
t	14.31%					
NWC	30,686,701	39,022,046	49,466,875	62,468,261	78,551,788	98,331,383
△NWC	14,842,549	8,335,345	10,444,829	13,001,385	16,083,528	19,779,595
INV	(5,989,923)	15,299,912	19,245,660	24,165,085	30,269,989	37,810,697
DEP	2,238,927	3,284,677	4,600,120	6,251,806	8,320,763	10,905,128
FCFF	13,389,223	4,995,490	6,889,061	9,261,780	12,225,822	15,916,151

Table 4.14: FCFF by World Bank

	2013	2014	2015	2016	2017	2018
EBIT	22,180,464	27,865,752	34,808,695	43,481,519	54,004,986	67,075,361
t	14.31%					
NWC	29,056,750	36,621,142	45,947,493	57,697,390	72,040,018	89,950,835
△NWC	13,212,598	7,564,392	9,326,351	11,749,896	14,342,628	17,910,817
INV	(5,443,310)	14,690,271	18,341,918	22,710,198	28,312,629	34,968,941
DEP	2,276,288	3,280,369	4,534,041	6,086,286	8,021,457	10,411,587
FCFF	13,513,004	4,903,323	6,692,659	8,884,650	11,642,011	15,007,389

Figure 4.13: FCFF of each scenario

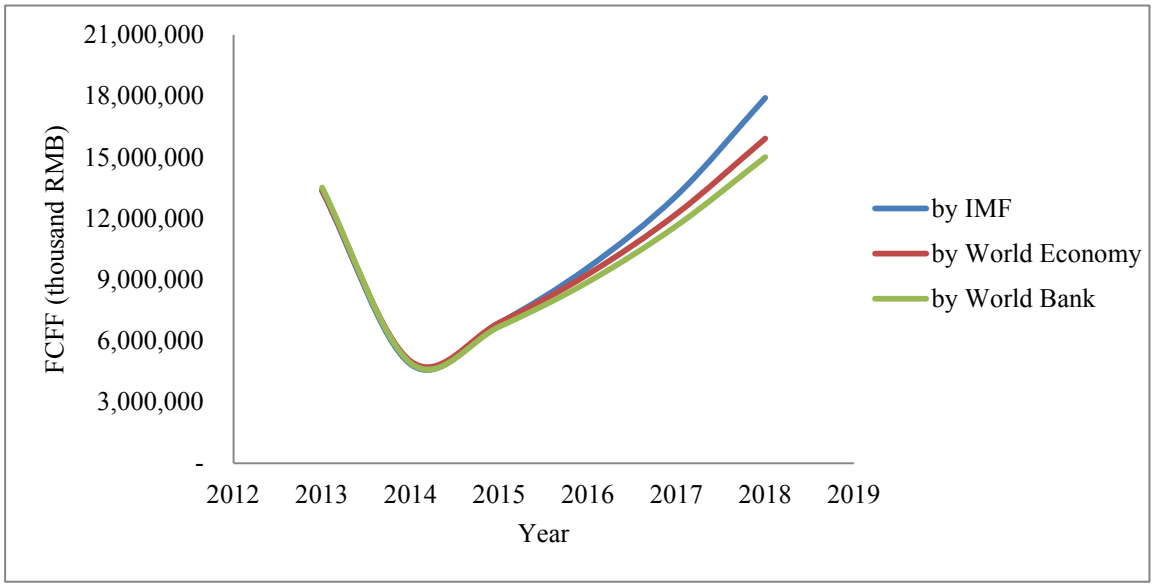


Table 4.12, 4.13 and 4.14 show the calculation of FCFF according to formula (2.10) and the value of its components of all three scenarios. Figure 4.13 shows the tendency of FCFF in each scenario. In 2013, FCFF has a different trend in each scenario mainly because investment is negative in 2013, but the trends in all three scenarios are the same.

4.2.2 Determine WACC

According to formula (2.13), we can calculate WACC but before we calculate WACC we should estimate cost of equity and cost of debt.

4.2.2.1 Determine cost of debt

Cost of debt equals to finance cost divided by total liabilities. We choose year 2008 and year 2012 to average the cost of debt. Finally we get the result, cost of debt equals to 3.1%.

4.2.2.2 Determine cost of equity

In this part, we choose CAPM model to calculate WACC. According to formula (2.14), we should find out the risk free rate, β coefficient and risk premium. From Ministry of Finance in China, we find out the risk free rate, for first phase we choose 3-year Treasury bond of China

which equals to 5.00% as the risk free rate, and for second phase we choose 5-year Treasury bond of China which equals to 5.41% as the risk free rate. From Damodaran Online, we find out the β coefficient in Internet software and services industry in China which equals to 1.44 and risk premium which equals to 5.90%. Finally we calculate the cost of equity for first phase is 13.50% and for second phase is 13.91%.

So we can calculate WACC for each scenario in every year according to forecasted balance sheet. The results are as following table:

Table 4.15: WACC

	2013	2014	2015	2016	2017	2018
WACC (IMF)	10.16%	10.42%	10.52%	10.59%	10.64%	10.99%
WACC (World Economy)	10.19%	10.39%	10.54%	10.67%	10.76%	10.85%
WACC (World Bank)	10.26%	10.45%	10.60%	10.72%	10.81%	10.89%

4.2.3 Valuation

According to FCFF in chapter 4.1 and WACC in chapter 4.2 we can calculate the value of Tencent for each scenario in first phase, but in second phase we need the growth rate of FCFF in the future.

4.2.3.1 Determine growth rate

From figure 3.2 we can see the growth rate of internet users was decrease in past years and at the end of 2012 it was only 4.83%. At the end of 2013 it became 4.57%. The amount of internet users will have a positive effect on the internet software and services industry. In recent years the industry developed rapidly and more competitors will appear. We assume that Tencent can exist for a long period, so we can assume the growth rate is 0%.

4.2.3.2 Determine the value of Tencent

According to the forecasting items we can calculate discounted FCFF and then calculate the

value of the company for each scenario as following tables.

Table 4.16: Discounted FCFF (thousand RMB)

	2013	2014	2015	2016	2017	2018
Value (IMF)	12,116,706	3,985,062	5,114,679	6,450,962	7,976,835	89,276,952
Value (World Economy)	12,151,298	4,106,907	5,123,437	6,224,193	7,417,621	80,305,063
Value (World Bank)	12,255,437	4,026,151	4,968,584	5,957,493	7,044,721	75,220,107

Table 4.17: Value compared with asset (thousand RMB)

	by IMF	by World Economy	by World Bank	book value of total asset
Value	124,921,195	115,328,520	109,472,494	75,255,811

Compared with the book value of total asset on December 31, 2012, the estimated value of Tencent is higher. For the IMF scenario, value is 66% higher than the book value of total asset. For World Economy scenario, value is 53% higher than the book value of total asset. For World Bank scenario, value is 45.5% higher than the book value of total asset. The intrinsic value of Tencent is higher than its book value and investors could invest in Tencent.

4.2.4 Sensitivity analysis

The sensitivity analysis is used to measure how sensitive a model is to changes in the value of the parameters of the model and to changes in the structure of the model. In this thesis, it is used to analyze how does the value of the company changing when one specific item in balance sheet or income statement changing within a specific percentage but other items are still the same. But in reality, the assumption that only one item changing is difficult to set up, but there may be two or more items are changing at the same time, so this analysis is difficult to accurately reflect the status of the value bearing the items change.

In this part, four items were chosen to analyze their sensitivity to the value of Tencent, including EBIT, WACC, investment and depreciation. We choose -10%, -5%, +5% and +10% percentage change of these items to calculate the new value of Tencent in order to get the sensitivity as following figures.

Figure 4.14: Sensitivity analysis (IMF)

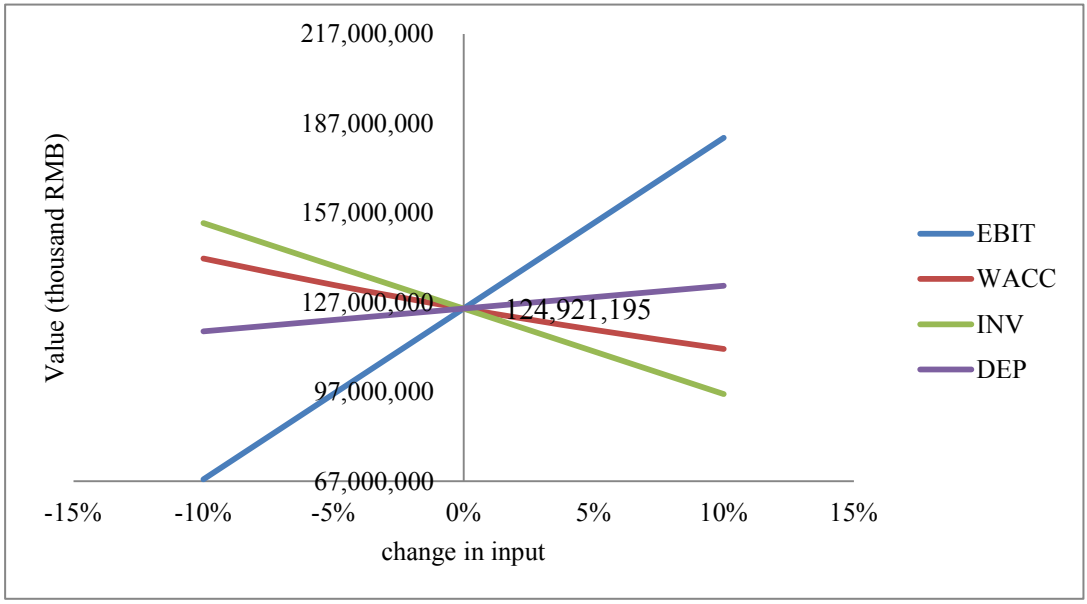


Figure 4.15: Sensitivity analysis (World Economy)

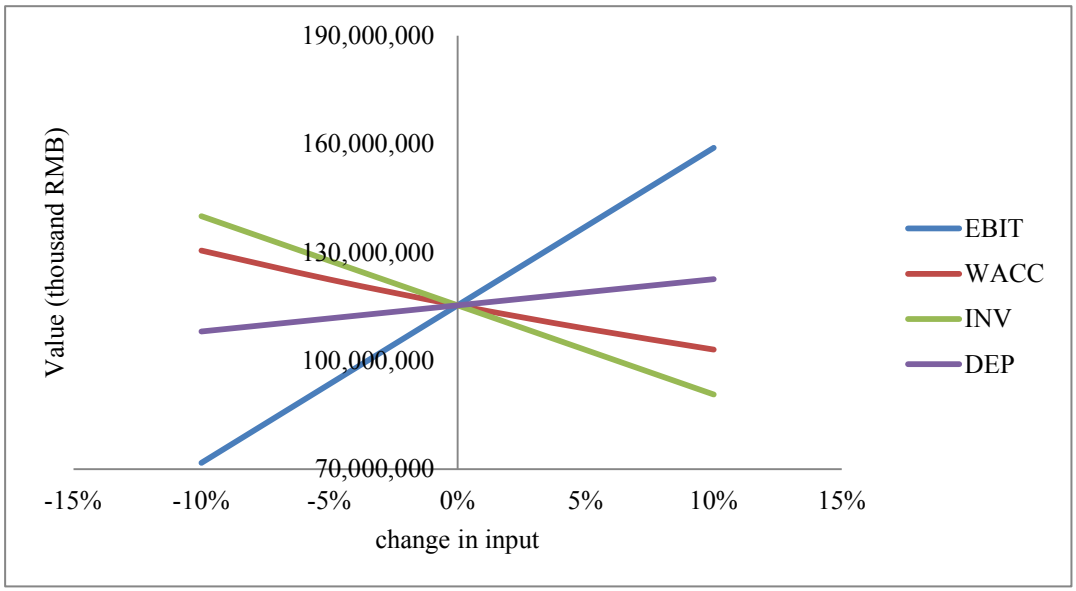


Figure 4.16: Sensitivity analysis (World Bank)

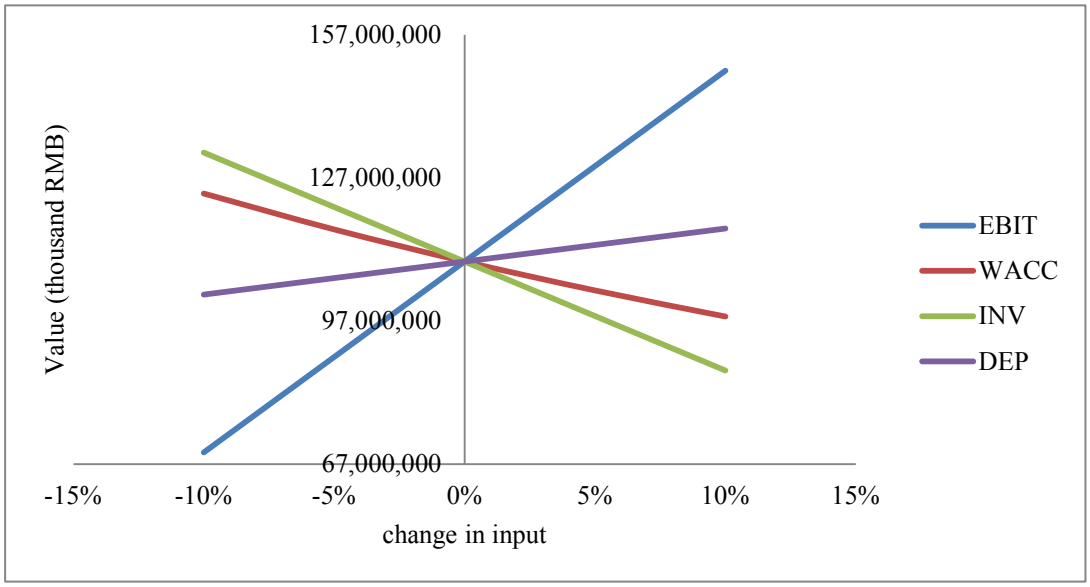


Figure 4.14, 4.15 and 4.16 show the sensitivity of each item of three scenarios. The mathematical model is formula (2.10) and (2.26). From the figures, we can see EBIT is positive linear sensitive to value of Tencent, investment is negative linear sensitive to value, depreciation is positive linear sensitive to value but WACC is negative nonlinear sensitive to value of Tencent.

From calculations in the first scenario when EBIT decrease 10% the value of Tencent will decrease 45.8%, when investment decrease 10% the value of Tencent will increase 22.9%, when depreciation decrease 10% the value of Tencent will decrease 6.1%. We can get the conclusion if EBIT decrease 1% the value will decrease 4.58%, the same with other items. When WACC decrease 10% the value will increase 13.4%, but we cannot conclude that when WACC decrease 1% the value will increase 1.34%, because WACC is nonlinear sensitive to value.

Compared with these three scenarios, all these items are more sensitive in scenario forecast by IMF than other two scenarios, because the forecast revenue by IMF is higher than other forecasted revenue by World Economy of World Bank. For example, the percentage change of value caused by increased 10% of EBIT is positive 45.8% in IMF scenario, but in World Economy scenario is 37.8% and in World Bank scenario is only 36.5%.

EBIT is most sensitive to value of Tencent in all these three scenarios, because EBIT is the most important source of FCFF in Tencent. Depreciation is the least sensitive to value in these three scenarios, because fixed asset is not main part of total asset which has been analyzed in chapter 4.1. In the future, Tencent could earn more revenues to increase FCFF in order to increase the value of Tencent.

5. Conclusion

Tencent didn't perform well in historical years from financial analysis. Tencent needs to consider going to reduce the risk which was brought by the decrease of current ratio and the financial risk at the same time it is necessary to consider how to make more profit because of the decrease of ROA and ROE.

The object of this thesis is to estimate the value of Tencent. According to application part, we can get the results. The value of Tencent is 124,921,195 thousand Yuan based on GDP forecasted by IMF, and it is 115,328,520 thousand Yuan based on GDP forecasted by World Economy. Based on GDP forecasted by World Bank the value of the company is 109,472,494 thousand Yuan. Through sensitivity analysis, we know EBIT, WACC, investment and depreciation are sensitive to the value of Tencent. What's more, EBIT is the most sensitive to the value in Tencent and depreciation is the least sensitive. So, Tencent would increase its value through increasing EBIT or total revenues.

Some acknowledge should be recognized that there is no one valuation approach that is suitable for all companies. One key point in valuation is to choose an appropriate valuation model to evaluate the valuation object based on the characteristics in valuation of the object. Another key point is to estimate the input parameters accurately which is depend on the understanding of the valuation object and its industry. Only if we do well in these two points, the valuation result could expose the value of the valuation object at maximum extent which providing effective decision-making information to the listing, investment, acquisition activities and so on.

In the future, Tencent will extend its communications and social leadership from PC to smart phone via applications such as Wireless QQ and Weixin, and enrich user experience by integrating additional services into these applications. And it will take advantage of the disruptive opportunities which the mobile Internet creates to expand its product range and

reach with users beyond what we have achieved on PC. In China, Tencent is investing aggressively in our mobile security software and mobile browser services. Internationally, it is stepping up our marketing investment to acquire users for WeChat. It will serve its users relevant content, products, and advertising by making appropriately targeted recommendations at the right time and under the right circumstances. It will continue to invest heavily in such downstream activities, including e-Commerce and advertising, so as to fully capture the revenue opportunities surrounding our platforms.

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List of Abbreviations

A: asset

B2C: business to customer

CAPM: capital asset pricing model

CNNIC: China internet network information center

CV: continual value

D: debt

DAU: daily active users

DCF: discount cash flow

DEP: depreciation

DIV: dividend

E: equity

EBIT: earnings before interest and tax

$E(R_E)$: expected rate of return of asset

$E(R_m)$: expected rate of market return

EVA: economic value added

FCF: free cash flow

FCFF: free cash flow to firm

GDP: gross domestic product

IM: instant messaging

IMF: international monetary fund

INV: investment

IPO: initial public offering

IVAS: internet value added services

MAU: monthly active users

MVAS: mobile and communications value added services

MV/BV: market value/book value

NOPAT: net operating profit after tax

NWC: net working capital

OPM: operating profit margin

P: price

PC: personal computer

PCU: peak concurrent users

P/E: price/earnings

R: cost of capital

R_d: cost of debt

R_e: cost of equity

R_f: risk free rate

R&D: research and development

ROA: return on asset

ROE: return on equity

RONIC: return on new investment capital

RP_m: risk premium for medium size company

RP_s: risk premium for small size company

RP_u: risk premium for specific company

SMS: short messaging service

S&P: standard and poor's

SWOT: strengths, weaknesses, opportunities, threats

V: value

VC: venture capital

WACC: weighted average cost of capital

Tables and figures

Declaration of Utilization of Results from the Diploma Thesis

Herewith I declare that

- I am informed that Act No. 121/2000 Coll. – the Copyright Act, in particular, Section 35 – Utilization of the Work as a Part of Civil and Religious Ceremonies, as a Part of School Performances and the Utilization of a School Work – and Section 60 – School Work, fully applies to my diploma (master) thesis;
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Ostrava dated 24.04.2014.

Yunfen Hou

Student's name and surname

List of annexes

Annexes

Annex 1: Income Statement in historical years

Unit: thousand RMB

	2008	2009	2010	2011	2012
revenues					
internet value-added services	4,914,974	9,530,711	15,482,301	23,042,758	31,995,183
mobile and telecommunications value-added services	1,398,984	1,905,599	2,715,931	3,270,841	3,722,968
online advertsing	826,049	962,171	1,372,522	1,992,216	3,382,328
e-commerce transactions	-	-	–	-	4,427,806
others	14,537	41,479	75,277	190,257	365,426
Revenues	7,154,544	12,439,960	19,646,031	28,496,072	43,893,711
cost of revenues	(2,170,421)	(3,889,468)	(6,320,200)	(9,928,308)	(18,207,360)
gross profit	4,984,123	8,550,492	13,325,831	18,567,764	25,686,351
interest income	-	136,014	255,922	468,990	835,671
other (losses)/gains, net	112,205	(58,213)	38,056	420,803	(283,900)
selling and marketing expenses	(518,147)	(581,468)	(945,370)	(1,920,853)	(2,993,437)
general and ministrative expenses	(1,332,207)	(2,026,347)	(2,836,226)	(5,283,154)	(7,765,272)
operating profit	3,245,974	6,020,478	9,838,213	12,253,550	15,479,413
finance (cost)/income, net	(140,732)	(1,953)	(838)	35,505	(347,518)
share of losses of associates	(347)	22,206	72,359	(24,255)	(54,386)
share of losses of jointly controlled entities	-	-	3,399	(165,731)	(26,494)
profit before income tax	3,104,895	6,040,731	9,913,133	12,099,069	15,051,015
income tax expense	(289,245)	(819,120)	(1,797,924)	(1,874,238)	(2,266,163)
profit for the year	2,815,650	5,221,611	8,115,209	10,224,831	12,784,852
attributable to:					
equity holders of the company	2,784,577	5,155,646	8,053,625	10,203,083	12,731,871
non-controlling interests	31,073	65,965	61,584	21,748	52,981
	2,815,650	5,221,611	8,115,209	10,224,831	12,784,852
earning per share for profit attributable to					
equity holders of the company (in RMB per share)					
-basic	1.552	2.862	4.432	5.609	6.965
-diluted	1.514	2.791	4.328	5.490	6.833
dividend per share					
final dividend proposed	HKD0.35	HKD0.40	HKD 0.55	HKD0.75	HKD1.00

Annex 2: Balance Sheet in historical years

Unit: thousand RMB

	2008	2009	2010	2011	2012
assets					
fixed assets	1,165,048	2,517,202	3,292,828	5,884,952	7,402,766
construction in progress	875,897	105,771	386,943	158,656	533,691
investment properties	64,981	68,025	37,229	21,871	21,674
land use rights	36,046	35,296	229,890	230,915	794,439
intangible assets	370,314	268,713	572,981	3,779,976	4,719,075
interests in associates	302,712	477,622	1,070,633	4,433,374	7,310,266
investment in jointly controlled entities	-	-	74,542	61,903	35,409
deferred income tax assets	334,164	341,410	219,019	198,058	168,906
available-for-sale financial assets	86,180	153,462	4,126,878	4,343,602	5,632,590
prepayments, deposits and other assets	124,354	80,306	445,430	2,187,570	1,236,129
long-term deposits	-	301,016	-	-	10,891,718
non-current assets	3,359,696	4,348,823	10,456,373	21,300,877	38,746,663
inventories	5,483	-	-	-	568,084
accounts receivable	983,459	1,229,436	1,715,412	2,020,796	2,353,959
prepayments, deposits and other assets	378,340	373,642	487,872	2,211,917	3,877,800
short-term deposits	2,060,651	5,310,168	11,725,743	13,716,040	13,805,675
restricted cash	-	200,000	1,036,457	4,942,595	2,520,232
cash and cash equivalents	3,067,928	6,043,696	10,408,257	12,612,140	13,383,398
current assets	6,495,861	13,156,942	25,373,741	35,503,488	36,509,148
total assets	9,855,557	17,505,765	35,830,114	56,804,365	75,255,811
equity					
share capital	195	197	198	198	199
share premium	1,155,209	1,244,425	1,100,302	1,950,876	2,879,990
shares held for share award scheme	(21,809)	(123,767)	(258,137)	(606,874)	(667,464)
other reserves	(51,599)	537,199	3,119,358	409,266	815,697
retained earnings	5,938,930	10,520,453	17,795,225	26,710,368	38,269,085
equity attributed to the company's equity holders	7,020,926	12,178,507	21,756,946	28,463,834	41,297,507
non-controlling interests	98,406	120,146	83,912	624,510	850,759
total equity	7,119,332	12,298,653	21,840,858	29,088,344	42,148,266
liabilities					
borrowings	-	-	-	-	2,105,643
long-term notes payable	-	-	-	3,733,331	7,516,766
deferred income tax liabilities	78,368	369,983	967,211	939,534	1,311,562
long-term payables	566,260	274,050	-	1,859,808	1,508,578
non-current liabilities	644,628	644,033	967,211	6,532,673	12,442,549
accounts payable	244,647	696,511	1,380,464	2,244,114	4,211,733
other payables and accruals	1,013,542	1,626,051	2,997,808	5,014,281	6,301,449
derivative financial instruments	-	-	17,964	20,993	-
borrowings	-	202,322	5,298,947	7,999,440	1,077,108
current income tax liabilities	47,307	85,216	341,103	708,725	419,872
other tax liabilities	103,933	216,978	225,188	179,499	540,095
deferred revenue	682,168	1,736,001	2,760,571	5,016,296	8,114,739
current liabilities	2,091,597	4,563,079	13,022,045	21,183,348	20,664,996
total liabilities	2,736,225	5,207,112	13,989,256	27,716,021	33,107,545
total euity and liabilities	9,855,557	17,505,765	35,830,114	56,804,365	75,255,811